JVC

SERVICE MANUAL

COLOR TELEVISION

AV-20F475/S,
AV-N21F45/S

BASIC CHASSIS
FJ2

I'Art™

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SPECIFICATION

Items		Contents
Dimensions (W × H × D)		66.7cm × 47.7cm × 50.5cm (26-1/4" × 18-13/16" × 19-7/8")
Mass		25kg (55lbs)
TV RF System		CCIR(M)
Color System		NTSC
Sound System		BTSC (Multi Channel Sound)
TV Receiving Channels and Frequency	VHF Low VHF High UHF CATV	02ch~06ch : 54MHz~88MHz 07ch~13ch : 174MHz~216MHz 14ch~69ch : 470MHz~806MHz 54MHz~804MHz Low Band : 02~06, A-8 by 02~06&01 High Band : 07~13 by 07~13 Mid Band : A~I by 14~22 Super Band : J~W by 23~36 Hyper Band : W+1~W+28 by 37~64 Ultra Band : W+29~W+84 by 65~125 Sub Mid Band : A8, A4~A1 by 01, 96~99
TV / CATV Total Channel		180 Channels
Intermediate Frequency	Video IF Sound IF	45.75 MHz 41.25 MHz (4.5MHz)
Color Sub Carrier		3.58 MHz
Power Input		AC120V, 60Hz
Power Consumption		85W
Picture Tube		20" (51cm) Measured diagonally, full square (H:30.5cm × W:40.6cm)
High Voltage		26.0kV ±1.3kV (at zero beam current)
Speaker		6.5cm × 13cm (2-1/2" × 5"), Oval type × 2
Audio Power Output		3W + 3W
Antenna Terminal (VHF/UHF)		F-type connector, 75Ω unbalanced, coaxial × 1
Video / Audio input [INPUT-1/2/3]	Component Video [INPUT-2] S-video [INPUT-1] Video Audio	RCA pin jack × 3 Y : 1V(p-p), negative sync, 75 Ω Pb/Pr : 0.7V(p-p), 75 Ω Mini DIN 4-pin × 1 Y : 1V(p-p), negative sync, 75 Ω C : 0.286V(p-p)(burst signal), 75 Ω 1V(p-p), negative sync, 75 Ω, RCA pin jack × 3 500mV(rms)(-4dBs), high impedance, RCA pin jack × 6
Audio Output (Fix)		500mV(rms)(-4dBs), low Impedance, (400kHz when modulated 100%), RCA pin jack × 2
Headphone Jack		3.5mm mini jack × 1
Remote Control Unit		RM-C1258G (AA/R6/UM-3 battery × 2)

Design & specifications are subject to change without notice.

SECTION 1
PRECAUTION

1.1 SAFETY PRECAUTIONS

(1) The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.

(2) Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.

(3) Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual**. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.

(4) **Use isolation transformer when hot chassis.**
The chassis and any sub-chassis contained in some products are connected to one side of the AC power line. An isolation transformer of adequate capacity should be inserted between the product and the AC power supply point while performing any service on some products when the HOT chassis is exposed.

(5) **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED (NEUTRAL) : (⏚) side GND and EARTH : (⏚) side GND.
Don't short between the LIVE side GND and ISOLATED (NEUTRAL) side GND or EARTH side GND and never measure the LIVE side GND and ISOLATED (NEUTRAL) side GND or EARTH side GND at the same time with a measuring apparatus (oscilloscope etc.). If above note will not be kept, a fuse or any parts will be broken.

(6) If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See B1 POWER SUPPLY check).

(7) The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.

(8) Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.

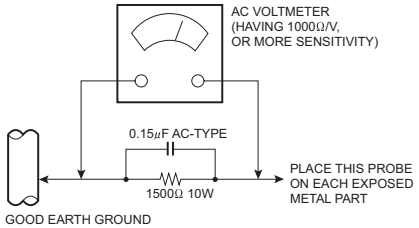
(9) When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

(10) **Isolation Check (Safety for Electrical Shock Hazard)**
After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screw heads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

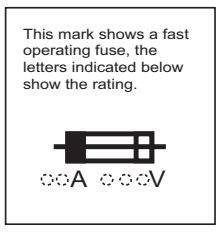
a) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 1100V AC (r.m.s.) for a period of one second.
(. . . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.) This method of test requires a test equipment not generally found in the service trade.

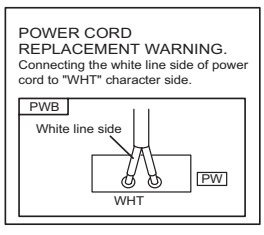
b) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

Alternate Check Method
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000Ω per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



(11) **High voltage hold down circuit check.**
After repair of the high voltage hold down circuit, this circuit shall be checked to operate correctly.See item **"How to check the high voltage hold down circuit"**.





SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

2.1 FEATURES

SMART SOUND
Decreases high sound levels, giving a regulated sound level.

SMART CAPTION
Smart Caption will appear when you press the MUTING button, only on channels where the broadcast contains closed captioning.

DIGITAL COMB FILTER
By the 3 line digital comb filter, the refreshed image can be seen.

VIDEO STATUS
Expression of a favorite screen can be chosen by the VIDEO STATUS function.
[STANDARD ↔ DYNAMIC ↔ THEATER ↔ GAME]

FLAT SQUARE CRT
It became legible from any position by CRT with few reflection and reflect lumps on the flat screen.

COMPONENT INPUT
Since the component signal input terminal is equipped, it reappears direct without deteriorating the signal from DVD.

MTS STEREO
The voice multiplex function of the MTS system is built in. (MTS = Multi channel TV Sound system)

RETURN PLUS
You can program a specific channel to return to while scanning through the channels using the CH+ and CH - keys.

VIDEO INPUT LABEL
This function is used to label video input connections for the onscreen displays.

HYPER SURROUND
Creates a deep, three-dimensional sound effect by channeling the audio through the TV's front-firing speakers.

V-CHIP [AV-20F475]
Since the V-CHIP is built in, it can choose, view and listen to a healthy program.

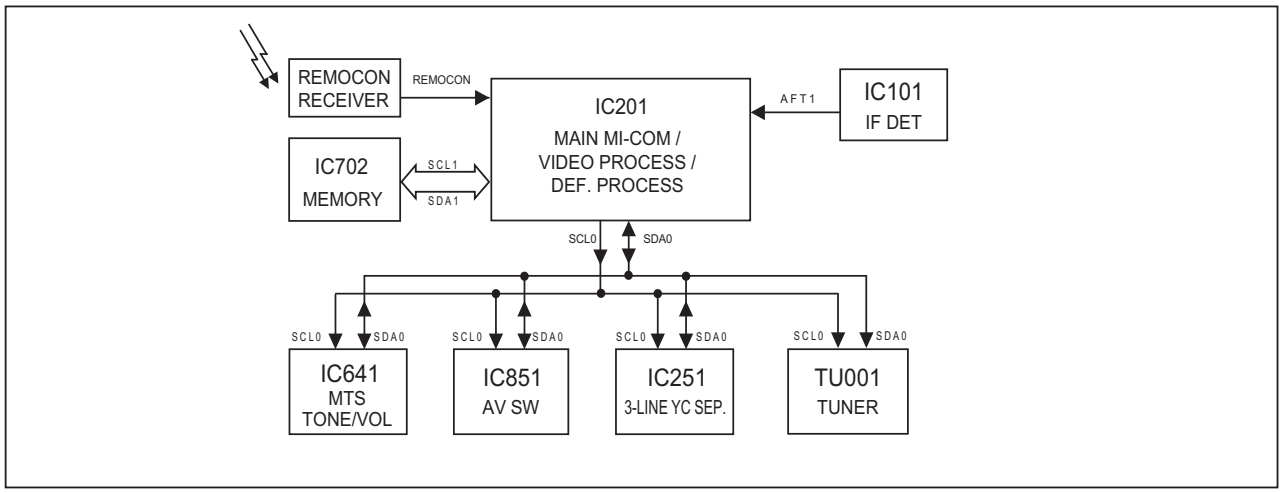
WORLD CLOCK [AV-20F475]
The world clock feature provides time differences for some of the major cities around the world in real time.

2.2 MAIN DIFFERENCE LIST

Item	AV-20F475/S	AV-N21F45/S
DESTINATION	USA, CANADA	MEXICO, PANAMA
V-CHIP	YES	NO
WORLD CLOCK	YES	NO
OSD LANGUAGE	ENG.	ESP.

2.3 TECHNICAL INFORMATION

2.3.1 SYSTEM BLOCK DIAGRAM



2.3.2 MAIN MI-COM (CPU) PIN FUNCTION

Pin No.	Pin name	I/O	Function	Pin No.	Pin name	I/O	Function
1	MTS_ADJ	I	Not used	29	YC_GND	-	GND
2	AFT1	I	AFT voltage for tuner (Tuning frequency control)	30	V1_IN	I	Not used
3	KEY	I	Key scan for front control [No signal : H]	31	ABCL	I	Current for automatic beam (brightness)/contrast limit
4	uP_DVss	-	GND	32	MONITOR_OUT	O	Not used
5	Reset	I	CPU reset [Reset : L]	33	BLACK_DET	-	Black level detection filter
6	8MHz_OUT	O	CPU system clock : 8MHz oscillation	34	NA	O	Not used
7	8MHz_IN	I	CPU system clock : 8MHz oscillation	35	APL_FIL	-	Average picture level filter
8	TEST	-	GND	36	APC_FIL	-	Automatic phase control filter
9	uP_DVdd	I	5V	37	fsc_OUT	O	Color sub carrier (3.58MHz) for 3-line digital comb filter [IC251]
10	AGC_MUTE	O	AGC muting for tuner (when channel select) [Muting : H]	38	YC_Vcc	I	5V (for video process circuit)
11	uP_VVss	-	GND	39	R_OUT	O	R signal
12	TV_HGND	-	GND	40	G_OUT	O	G signal
13	FBP_SCP	I	Flyback pulse (H. pulse)	41	B_OUT	O	B signal
14	HOUT	O	H. drive (oscillation)	42	RGB_Vcc	I	9V (for RGB process circuit)
15	H_Vcc	I	9V (for H. oscillation start)	43	IK_IN	I	Not used
16	HAFC_1	-	H. AFC filter	44	TV_AGND	-	GND
17	Vsaw	-	V. saw filter	45	uP_AGND	-	GND
18	VOUT	O	V. drive	46	uP_AVdd	I	5V
19	EW_OUT	O	Not used	47	MAIN_POWER	O	Power on/off switching control [Powen on : L]
20	X-RAY	I	X-ray detection (for protection) [Detection : H]	48	HAZARD	I	Not used
21	Ys	I	Not used	49	SDA0	I/O	Data for Inter IC control bus (for various devices)
22	Cb_IN	I	Cb (external) signal	50	SCL0	O	Clock for Inter IC control bus (for various devices)
23	Y_IN	I	Y (external) signal	51	SDA1	I/O	Data for Inter IC control bus (for main memory)
24	Cr_IN	I	Cr (external) signal	52	AUDIO_MUTE	O	Audio muting [Muting : H]
25	TV_DVcc	I	3.3V	53	SCL1	O	Clock for Inter IC control bus (for main memory)
26	V3_IN/C_IN	I	Chroma signal (for YC separation output)	54	LED	O	POWER / ON TIMER LED Indication [lighting : L]
27	EHT_IN	I	Not used	55	REMOCON	I	Remote control sensor [No input : H]
28	V2_IN/Y_IN	I	Y signal (for YC separation output)	56	COMPULINK	I	Not used

SECTION 3
DISASSEMBLY

3.1 DISASSEMBLY PROCEDURE

3.1.1 REMOVING THE REAR COVER

(1) Unplug the power plug.
(2) Remove the 7 screws **[A]** as shown in the Fig.1.
(3) Remove the 4 screws **[B]** as shown in the Fig.1.
(4) Withdraw the REAR COVER toward you.

3.1.2 REMOVING THE MAIN PWB

• Remove the REAR COVER.
(1) Raise the backside of the MAIN PWB, and remove the PWB STOPPER **[C]** from the cabinet.
(2) Withdraw the MAIN PWB backward. (If necessary, remove the wire clamp, connectors etc.)

3.1.3 REMOVING THE SPEAKER

• Remove the REAR COVER.
(1) Remove the 2 screws **[D]**, then remove the SPEAKER with SPEAKER HOLDER.
(2) Remove the 4 screws **[E]**, then remove the SPEAKER from the SPEAKER HOLDER.
(3) Follow the same steps when remove the other hand SPEAKER.

3.1.4 CHECKING THE MAIN PWB

To check the PW Board from back side.
(1) Pull out the MAIN PWB (refer to REMOVING THE MAIN PWB).
(2) Erect the MAIN PWB vertically with the HVT side facing up so that you can easily check the back side of the MAIN PWB.

CAUTION :

• When erecting the MAIN PWB, be careful so that there will be no contacting with other PW Board.
• Before turning on power, make sure that the wire connector is properly connected.
• **When conducting a check with power supplied, be sure to confirm that the CRT EARTH WIRE (BRAIDED ASS'Y) is connected to the CRT SOCKET PWB.**

3.1.5 WIRE CLAMPING AND CABLE TYING

(1) Be sure to clamp the wire.
(2) Never remove the cable tie used for tying the wires together. Should it be inadvertently removed, be sure to tie the wires with a new cable tie.

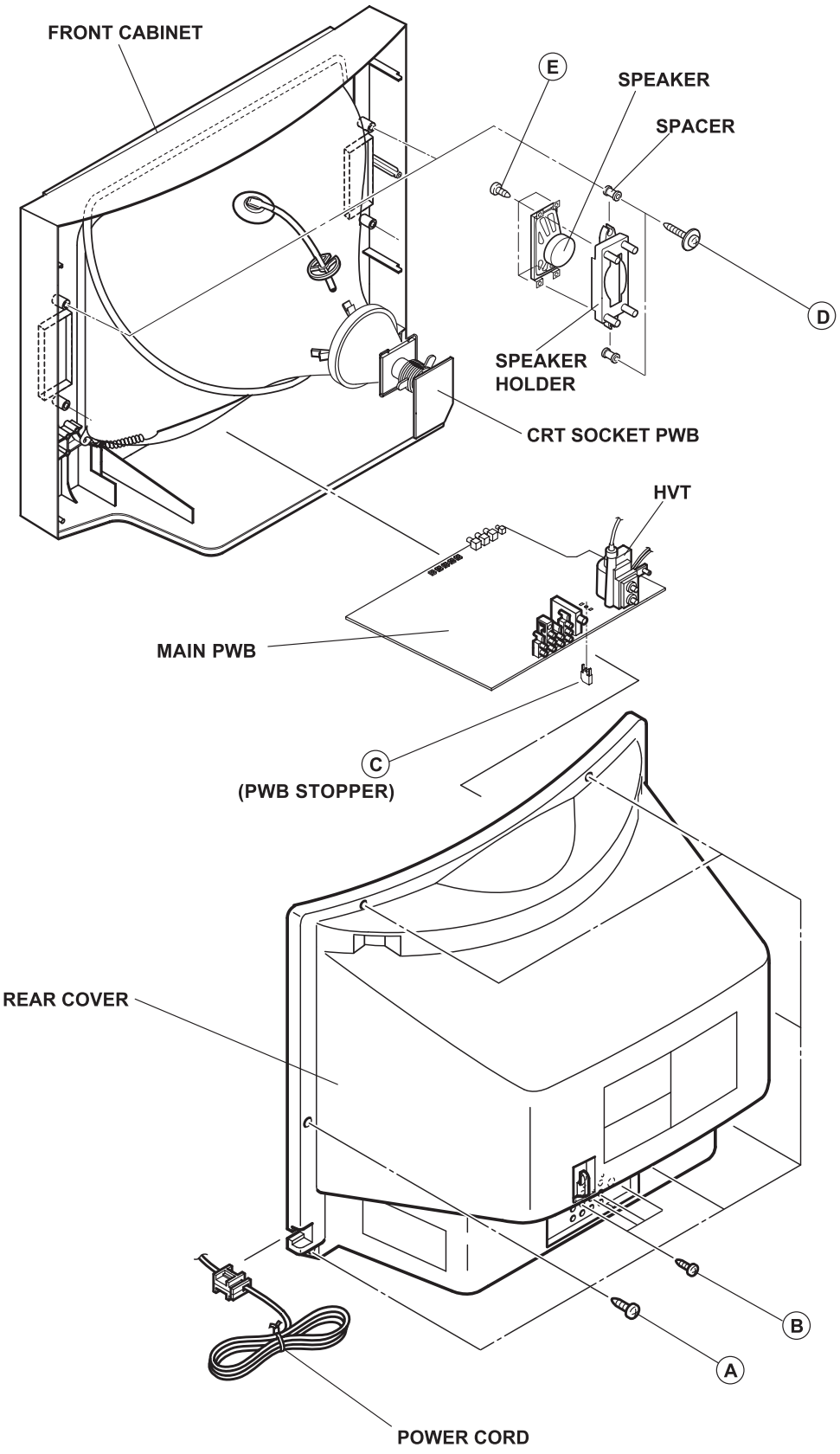

FRONT CABINET
E
SPEAKER
SPACER
D
SPEAKER
HOLDER
CRT SOCKET PWB
HVT
MAIN PWB
C
(PWB STOPPER)
REAR COVER
B
A
POWER CORD

Fig.1

3.2 MEMORY IC REPLACEMENT

- This model uses the memory IC.
- This memory IC stores data for proper operation of the video and drive circuits.
- When replacing, be sure to use an IC containing this (initial value) data.

3.2.1 MEMORY IC REPLACEMENT PROCEDURE

1. Power off
Switch off the power and disconnect the power plug.

2. Replace the memory IC
Be sure to use the memory IC written with the initial setting values.

3. Power on
Connect the power plug to the AC outlet and switch on the power.

4. Receiving channel setting
Refer to the OPERATING INSTRUCTIONS and set the receive channels (Channels Preset) as described.

5. User setting
Check the user setting items according to the given in page later. Where these do not agree, refer to the OPERATING INSTRUCTIONS and set the items as described.

6. SERVICE MODE setting
Verify what to set in the SERVICE MODE, and set whatever is necessary (Fig.1). Refer to the SERVICE ADJUSTMENT for setting.

3.2.2 SERVICE MODE SETTING ITEMS

SERVICE MENU

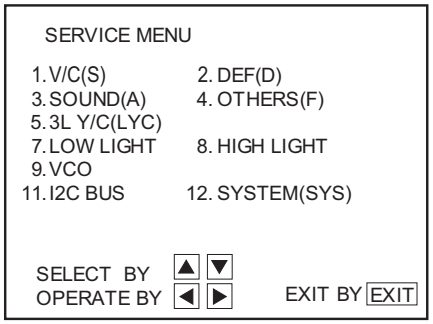


Fig.1

Setting items	Settings	Item No.
1. V/C(S) (Video setting)	Adjust	S01~S47
2. DEF(D) (Deflection setting)	Adjust	D01~D33
3. SOUND(A) (Audio setting)	Adjust	A01~A08
4. OTHERS [Do not adjust] (Factory setting)	Fixed	F01~F18
5. 3L Y/C [Do not adjust] (Y/C separate setting)	Fixed	LYC01~LYC12
7. LOW LIGHT (White balance setting)	Adjust	---
8. HIGH LIGHT (White balance setting)	Adjust	---
9. VCO (VCO setting)	Adjust	---
11. I2C BUS [Do not adjust] (I^2C BUS setting)	Fixed	---
12.SYSTEM (SYS) (System constant setting)	Fixed	SYS01~SYS25

3.2.3 SETTINGS OF FACTORY SHIPMENT

3.2.3.1 BUTTON OPERATION

Setting item	Setting position
POWER	Off
CHANNEL	CH-02
VOLUME	10

3.2.3.2 REMOTE CONTROL DIRECT OPERATION

Setting item	Setting position
INPUT	TV
CHANNEL	CH-02
VOLUME	10
MUTING	OFF
DISPLAY	OFF
OFF TIMER	OFF
VIDEO STATUS	DYNAMIC
ASPECT	4:3
HYPER SORROUND	OFF

3.2.3.3 REMOTE CONTROL MENU OPERATION

(1) PICTURE ADJUST

Setting item	Setting position
TINT	0
COLOR	0
PICTURE	+8
BRIGHT	0
DETAIL	+8
COLOR TEMPERRATURE	HIGH
NOISE MUTING	ON

(2) SOUND ADJUST

Setting item	Setting position
BASS	Center
TREBLE	Center
BALANCE	Center
MTS	STEREO
SMART SOUND	OFF

(3) CLOCK / TIMERS

Setting item	Setting position
SET CLOCK	OFF
ON / OFF TIMER	OFF
WORLD CLOCK	Refer to OPERATING INSTRUCTIONS [AV-20F475]

(4) INITIAL SETUP

Setting item	Setting position
LANGUAGE	ENG. [AV-20F475] ESP. [AV-N21F45]
CLOSED CAPTION	OFF
FRONT PANEL LOCK	OFF
AUTO SHUT OFF	OFF
XDS ID	ON
VIDEO INPUT LABEL	Refer to OPERATING INSTRUCTIONS
V-CHIP	OFF [AV-20F475]

3.3 REPLACEMENT OF CHIP COMPONENT

3.3.1 CAUTIONS

(1) Avoid heating for more than 3 seconds.
(2) Do not rub the electrodes and the resist parts of the pattern.
(3) When removing a chip part, melt the solder adequately.
(4) Do not reuse a chip part after removing it.

3.3.2 SOLDERING IRON

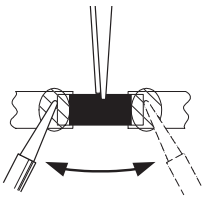
(1) Use a high insulation soldering iron with a thin pointed end of it.
(2) A 30w soldering iron is recommended for easily removing parts.

3.3.3 REPLACEMENT STEPS

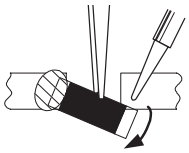
1. How to remove Chip parts

[Resistors, capacitors, etc.]

(1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.

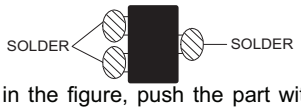


(2) Shift with the tweezers and remove the chip part.

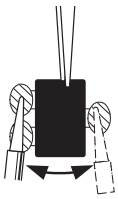


[Transistors, diodes, variable resistors, etc.]

(1) Apply extra solder to each lead.



(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.



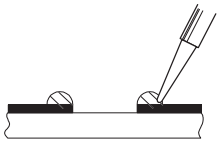
NOTE :

After removing the part, remove remaining solder from the pattern.

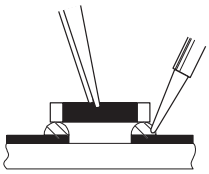
2. How to install Chip parts

[Resistors, capacitors, etc.]

(1) Apply solder to the pattern as indicated in the figure.

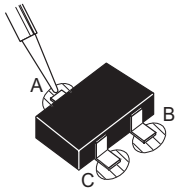


(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

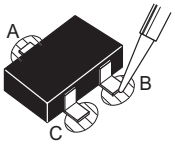


[Transistors, diodes, variable resistors, etc.]

(1) Apply solder to the pattern as indicated in the figure.
(2) Grasp the chip part with tweezers and place it on the solder.
(3) First solder lead **A** as indicated in the figure.



(4) Then solder leads **B** and **C**.



SECTION 4
ADJUSTMENT

4.1 ADJUSTMENT PREPARATION

(1) **There are 2 ways of adjusting this TV : One is with the REMOTE CONTROL UNIT and the other is the conventional method using adjustment parts and components.**

(2) **The adjustment using the REMOTE CONTROL UNIT is made on the basis of the initial setting values. The setting values which adjust the screen to the optimum condition can be different from the initial setting values.**

(3) Make sure that connection is correctly made AC to AC power source.

(4) Turn on the power of the TV and measuring instruments for warming up for at least 30 minutes before starting adjustments.

(5) If the receive or input signal is not specified, use the most appropriate signal for adjustment.

(6) Never touch the parts (such as variable resistors, transformers and condensers) not shown in the adjustment items of this service adjustment.

4.2 PRESET SETTING BEFORE ADJUSTMENTS

Unless otherwise specified in the adjustment items, preset the following functions with the REMOTE CONTROL UNIT.

Item	Preset value
VIDEO STATUS	STANDARD
TINT / COLOR / PICTURE / BRIGHT / DETAIL	Center
COLOR TEMPERTURE	LOW
BASS / TREBLE / BALANCE	Center
MTS	STEREO
HYPER SORROUND	OFF
ASPECT	4:3

4.3 MEASURING INSTRUMENT AND FIXTURES

- DC voltmeter (or digital voltmeter)
- Oscilloscope
- Signal generator (Pattern generator) [NTSC]
- TV audio multiplex signal generator
- Remote control unit

4.4 ADJUSTMENT ITEMS

■ **CHECK ITEM**
- B1 VOLTAGE check
- HIGH VOLTAGE HOLD DOWN check

■ **TUNER / IF CIRCUIT**
- IF VCO adjustment

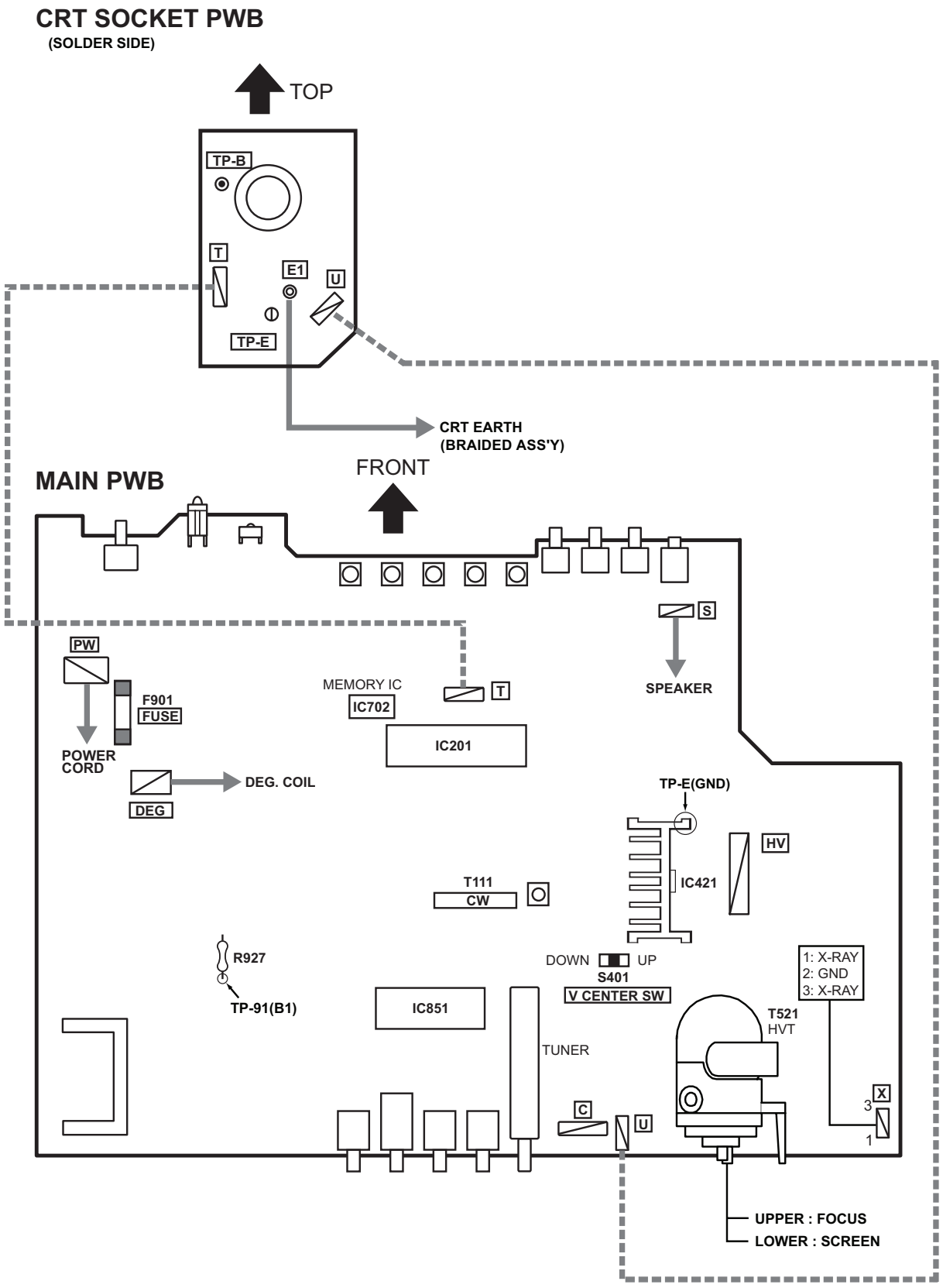
■ **ADJUSTMENT OF FOCUS**
- FOCUS

■ **DEFLECTION CIRCUIT**
- 4:3 V. SIZE & V. CENTER adjustment
- 16:9 V. SIZE & V. CENTER adjustment
- 4:3 H. POSITION /H. SIZE / SIDE PIN adjustment
- 16:9 H. POSITION /H. SIZE / SIDE PIN adjustment

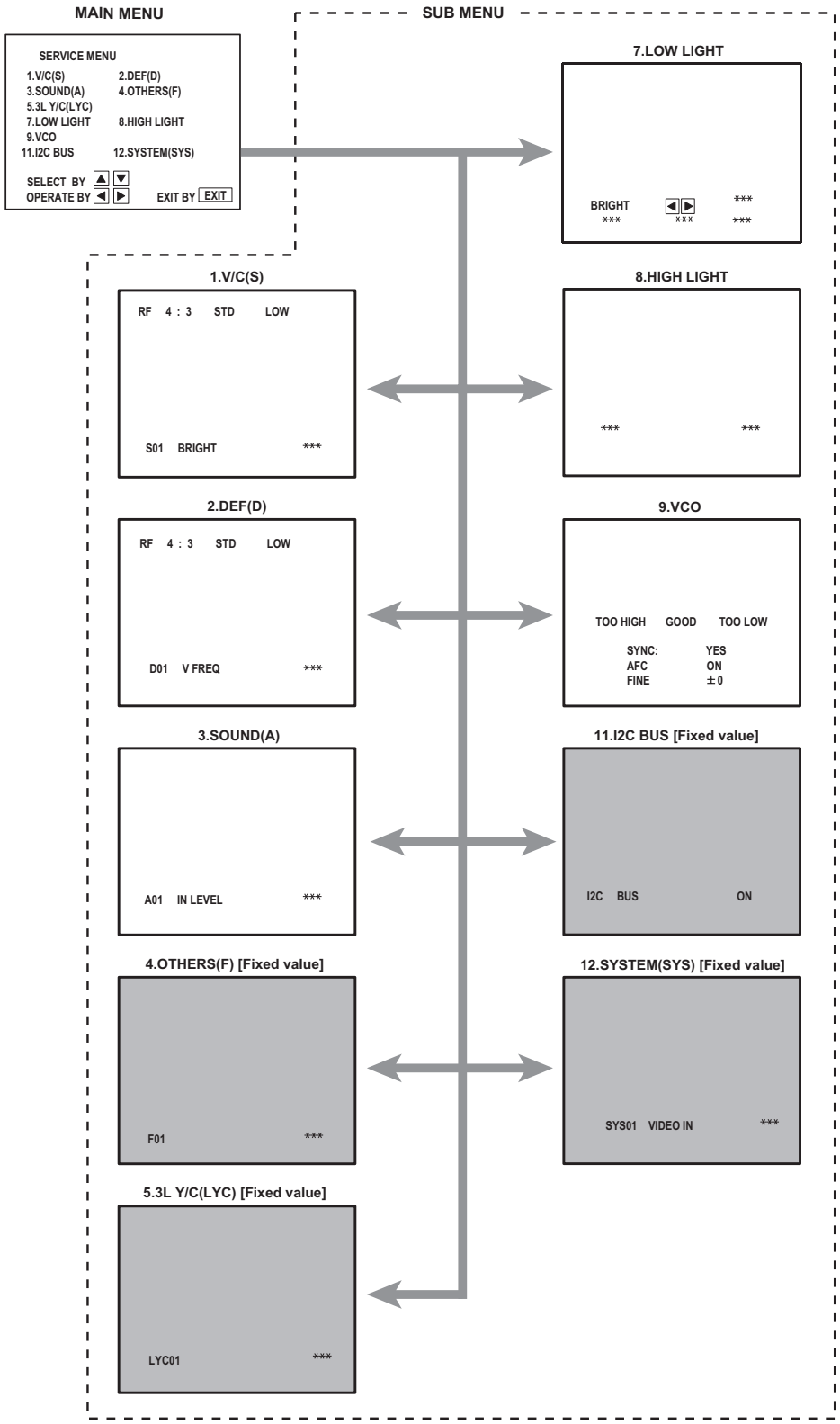
■ **VIDEO CIRCUIT**
- WHITE BALANCE (LOW LIGHT) adjustment
- WHITE BALANCE (HIGH LIGHT) adjustment
- SUB BRIGHT adjustment
- SUB CONTRAST adjustment

■ **MTS CIRCUIT**
- MTS INPUT LEVEL check
- MTS SEPARATION adjustment

4.5 ADJUSTMENT LOCATIONS



4.6 BASIC OPERATION OF SERVICE MODE



4.6.1 TOOL OF SERVICE MODE OPERATION

Operate the SERVICE MODE with the REMOTE CONTROL UNIT.

4.6.2 SERVICE MODE ITEMS

In general, basic setting (adjustments) items or verifications are performed in the SERVICE MODE.

1. V/C (S)	This sets the setting values of the VIDEO circuit.
2. DEF (D)	This sets the setting values of the DEFLECTION circuit.
3. SOUND (A)	This sets the setting values of the AUDIO circuit.
4. OTHERS (F)	This sets the setting values of the factory settings. **[Do not adjust]**
5. 3L Y/C(LYC)	This sets the setting values of the 3 line YC separation control circuit. **[Do not adjust]**
7. LOW LIGHT	This sets the setting values of the WHITE BALANCE (LOW LIGHT) control circuit.
8. HIGH LIGHT	This sets the setting values of the WHITE BALANCE (HIGH LIGHT) control circuit.
9. VCO	This sets the setting values of the VCO control circuit.
11. I2C BUS	This sets the setting values of the I^2C BUS control circuit. **[Do not adjust]**
12. SYSTEM(SYS)	This sets the setting values of the system control circuit. **[Do not adjust]**

4.6.3 HOW TO ENTER THE SERVICE MODE

(1) Set to 0 minutes using the [SLEEP TIMER] key.
(2) Press the [VIDEO STATUS] key and [DISPLAY] key simultaneously, then enter the SERVICE MODE.

NOTE:

Before entering the SERVICE MODE, confirm that the setting of TV / CATV switch of the REMOTE CONTROL UNIT is at the "TV" side and the setting of VCR / DVD switch is at the "VCR" side. If the switches have not been properly set, you cannot enter the SERVICE MODE.

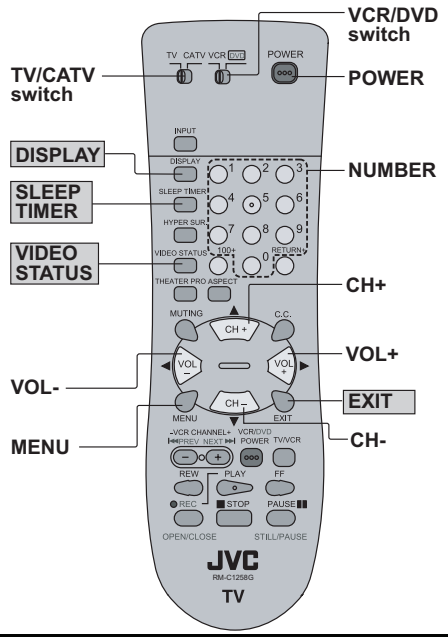
4.6.4 HOW TO STORE OF SETTING VALUE

The setting value will be stored automatically when release the REMOTE CONTROL UNIT keys

4.6.5 HOW TO EXIT THE SERVICE MODE

Press the [EXIT] key to exit the SERVICE MODE.

SERVICE MODE SELECT KEY



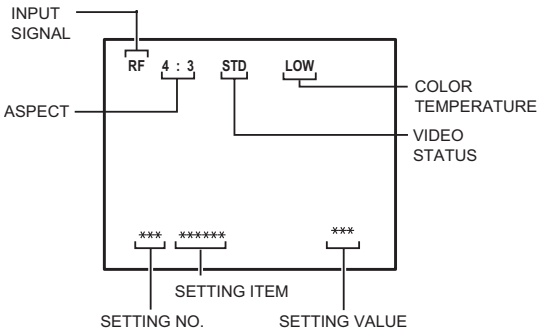
4.6.6 SERVICE MODE SETTING

1. V/C(S), 2. DEF(D)

- Press [CH+] / [CH-] key
  For scrolling up/down the adjustment item.
- Press [VOL+] / [VOL-] key
  For scrolling up/down the data values.

NOTE:

The setting value will be stored automatically when release the REMOTE CONTROL UNIT keys.



(1) INPUT SIGNAL

RF	: Antenna input
COMP	: External (Component) input
EXT	: External (S / Composite) input

(2) ASPECT

4:3	: 4:3 screen mode
16:9	: 16:9 screen mode

(3) VIDEO STATUS

STD	: STANDARD
THEA	: THEATER

(4) COLOR TEMPERATURE

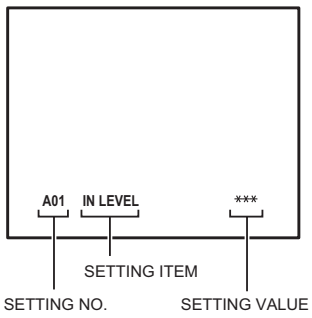
HIGH	: White balance high mode
LOW	: White balance low mode

3. SOUND (A)

- Press [CH+] / [CH-] key
  For scrolling up/down the adjustment item.
- Press [VOL+] / [VOL-] key
  For scrolling up/down the data values.

NOTE:

The setting value will be stored automatically when release the REMOTE CONTROL UNIT keys.

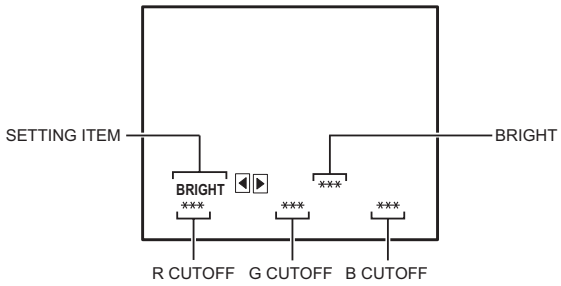


7. LOW LIGHT

The settings for LOW LIGHT is described in the WHITE BALANCE page of ADJUSTMENT PROCEDURE.

NOTE:

The setting value will be stored automatically when release the REMOTE CONTROL UNIT keys.

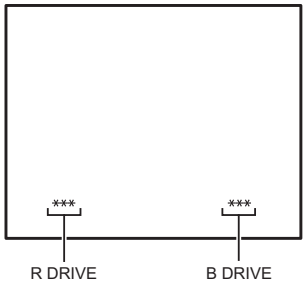


8. HIGH LIGHT

The settings for HIGH LIGHT is described in the WHITE BALANCE page of ADJUSTMENT PROCEDURE.

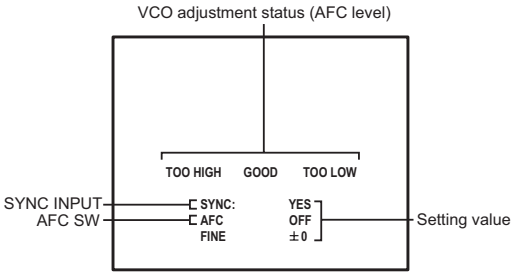
NOTE:

The setting value will be stored automatically when release the REMOTE CONTROL UNIT keys.



9. VCO

The setting for VCO is described in the IF VCO page of ADJUSTMENT PROCEDURE.



4.7 INITIAL SETTING VALUE OF SERVICE MODE

(1) Adjustment of the SERVICE MODE is made on the basis of the initial setting values ; however, the new setting values which set the screen in its optimum condition may differ from the initial setting.
(2) Do not change the initial setting values of the setting items NOT LISTED IN ADJUSTMENT PROCEDURE.
(3) --- : This mark described in each table shows "Cannot adjust it."

4.7.1 [1.V/C(S)]

No.	Setting item	Variable range	Initial setting value				
			RF			EXTERNAL (S / COMPOSITE)	EXTERNAL (COMPONENT)
			STANDARD		THEATER	STANDARD	STANDARD
			4:3	16:9	4:3	4:3	
S01	BRIGHT	0 ~ 127	64	---	---	---	---
S02	PICTURE	0 ~ 127	65	---	---	---	---
S03	COLOR	0 ~ 127	41	---	---	---	44
S04	TINT	0 ~ 127	67	---	---	---	62
S05	DETAIL	0 ~ 63	30	---	---	35	40
S06	BRIGHT+-	-32 ~ +32	---	±0	±0	-3	-2
S07	PICT+-	-32 ~ +32	---	±0	±0	-7	±0
S08	COLOR+-	-32 ~ +32	---	±0	-3	+1	---
S09	TINT+-	-32 ~ +32	---	±0	-6	-6	---
S10	DETAIL+-	-32 ~ +32	---	---	+3	---	---

No.	Setting item	Variable range	Initial setting value							
			RF / EXTERNAL (S / COMPOSITE)				EXTERNAL (COMPONENT)			
			STANDARD		THEATER		STANDARD		THEATER	
			LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
S11	R CUT OFF	0 ~ 255	30	---	---	---	---	---	---	---
S12	G CUT OFF	0 ~ 255	30	---	---	---	---	---	---	---
S13	B CUT OFF	0 ~ 255	30	---	---	---	---	---	---	---
S14	R DRIVE	0 ~ 127	64	---	---	---	---	---	---	---
S15	B DRIVE	0 ~ 127	64	---	---	---	---	---	---	---
S16	R CUT +-	-128 ~ +127	---	±0	±0	±0	±0	---	---	---
S17	G CUT +-	-128 ~ +127	---	±0	±0	±0	±0	---	---	---
S18	B CUT +-	-128 ~ +127	---	±0	±0	±0	±0	---	---	---
S19	R DRV +-	-128 ~ +127	---	+5	+13	+7	±0	---	---	---
S20	B DRV +-	-128 ~ +127	---	+6	-25	-9	±0	---	---	---
S21	NTSC MAT	0 ~ 3	3	3	1	1	2	2	1	1
S22	BLACK ST	0 ~ 3	1	---	1	---	---	---	---	---
S23	DCREST	0 ~ 1	1	---	1	---	---	---	---	---
S24	DCRSW	0 ~ 1	1	---	1	---	---	---	---	---

No.	Setting item	Variable range	Initial setting value		
			RF	EXTERNAL (S / COMPOSITE)	EXTERNAL (COMPONENT)
S25	ASY SHRP	0 ~ 7	4	4	4
S26	BPF FØ	0 ~ 1	0	0	---
S27	KILR OFF	0 ~ 1	0	0	---
S28	KILR SEN	0 ~ 1	1	1	---

No.	Setting item	Variable range	Initial setting value
S29	RGB MUTE	0 ~ 1	0
S30	BLUE B	0 ~ 1	1
S31	VIDEO SW	0 ~ 3	3
S32	CMP ABCL	0 ~ 1	0
S33	OSD ABL	0 ~ 1	0
S34	OSD CONT	0 ~ 63	6
S35	SUB CONT	0 ~ 15	8
S36	ABL GAIN	0 ~ 3	0
S37	ABL PNT	0 ~ 3	3
S38	Y GAMMA	0 ~ 3	1
S39	Y MUTE	0 ~ 1	0
S40	SVM GAIN	0 ~ 3	3
S41	SVM PH	0 ~ 3	0
S42	WPL	0 ~ 1	0
S43	COL GMM	0 ~ 1	0
S44	V1 GAIN	0 ~ 7	4
S45	VMOFF DE	-128 ~ +127	±0
S46	APC CLK	0 ~ 1	1
S47	PIP ADJ	0 ~ 15	0

4.7.2 [2. DEF (D)]

No.	Setting item	Variable range	Initial setting value		
			RF		EXTERNAL
			4:3	16:9	4:3
D01	V FREQ	0 ~ 3	0	0	3
D02	AFC GAIN	0 ~ 3	0	0	2
D03	H POSI	0 ~ 31	8	---	8
D04	H POSI+-	-128 ~ +127	---	0	---
D05	V PHASE	0 ~ 7	0	---	0
D06	V PH+-	-128 ~ +127	---	0	---
D07	V SIZE	0 ~ 127	55	---	55
D08	V SIZE+-	-128 ~ +127	---	-26	---
D09	V CENTER	0 ~ 63	32	---	32
D10	V CENT+-	-128 ~ +127	---	0	---
D11	V S CORR	0 ~ 15	4	---	4
D12	V S CO+-	-128 ~ +127	---	±0	---
D13	V LIN	0 ~ 15	11	---	11
D14	V LIN+-	-128 ~ +127	---	±0	---
D15	H SIZE	0 ~ 63	32	---	32
D16	H SIZE+-	-128 ~ +127	---	±0	---
D17	WVMT TOP	0 ~ 3	0	2	0
D18	WVMT BTM	0 ~ 3	0	2	0
D19	EWCR TOP	0 ~ 31	16	---	16
D20	EWCR T+-	-128 ~ +127	---	±0	---
D21	EWCR BTM	0 ~ 31	16	---	16
D22	EWCR B+-	-128 ~ +127	---	±0	---
D23	EW PARA	0 ~ 63	26	---	26
D24	EW PAR+-	-128 ~ +127	---	±0	---
D25	V EHT	0 ~ 7	0	---	0
D26	V EHT+-	-128 ~ +127	---	±0	---
D27	H EHT	0 ~ 7	0	---	0
D28	H EHT+-	-128 ~ +127	---	±0	---
D29	TRAPEZ	0 ~ 63	34	---	34
D30	TRAPEZ+-	-128 ~ +127	---	±0	---
D31	V AGC	0 ~ 1	0	0	0
D32	BLANK SW	0 ~ 1	0	0	0
D33	VRMP BI	0 ~ 1	0	0	0

4.7.3 [3. SOUND(A)]

No.	Setting item	Variable range	Initial setting value
A01	IN LEVEL	0 ~ 15	12
A02	LOW SEP	0 ~ 63	39
A03	HI SEP	0 ~ 63	16
A04	SAPC	0 ~ 1	0
A05	BBE BASS	-128 ~ +127	±0
A06	BBE TRE	-128 ~ +127	±0
A07	AHS MVE	-128 ~ +127	±0
A08	AHS MSC	-128 ~ +127	±0

4.7.4 [4. OTHERS(F)] [Do not adjust : All fixed]

No.	Setting item	Variable range	Initial setting value
F01	OSD POSI	0 ~ 255	24
F02	OSD FREQ	0 ~ 255	83
F03	CCD POSI	0 ~ 255	44
F04	CCD FREQ	0 ~ 255	93
F05	CCD CONT	0 ~ 63	11
F06	PUR WBCK	0 ~ 1	0
F07	PUR CONT	0 ~ 63	62
F08	CCD PCHK	0 ~ 1	1
F09	VMOFF	0 ~ 1	0
F10	VNR CHK	0 ~ 255	3
F11	VCSN TM	0 ~ 255	5
F12	VM DAT A	-128 ~ +127	+8
F13	VM DAT B	-128 ~ +127	-4
F14	VM DAT C	-128 ~ +127	-10
F15	VM DAT D	-128 ~ +127	-16
F16	VM DAT E	0 ~ 1	0
F17	XDSID TM	0 ~ 255	15
F18	FM TRAP	0 ~ 1	0

4.7.5 [5. 3L Y/C(LYC)] [Do not adjust : All fixed]

No.	Setting item	Variable range	Initial setting value
LYC01	MODE	0 ~ 7	4
LYC02	VENH	0 ~ 7	1
LYC03	PDSOFF	0 ~ 1	0
LYC04	CB	0 ~ 1	0
LYC05	VNLR	0 ~ 15	2
LYC06	GSEL0	0 ~ 1	0
LYC07	GSEL1	0 ~ 1	1
LYC08	COR	0 ~ 3	0
LYC09	TRAP	0 ~ 1	1
LYC10	CHTRAP	0 ~ 1	0
LYC11	CBPF	0 ~ 1	0
LYC12	ENHOFF	0 ~ 1	0

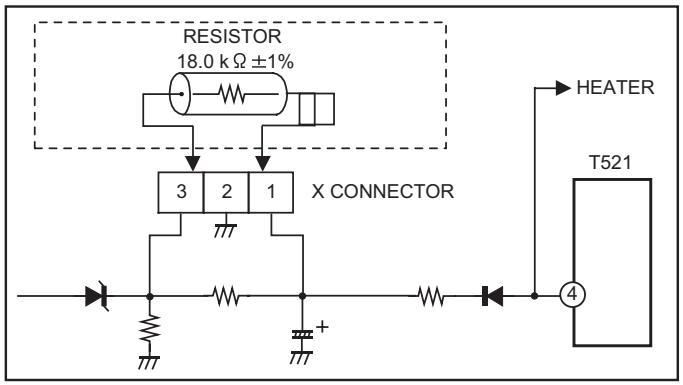
4.7.6 [12. SYSTEM(SYS)] [Do not adjust : All fixed]

No.	Setting item	Variable range	Initial setting value	
			AV-20F475	AV-N21F45
SYS01	VIDEO IN	0 ~ 3	3	3
SYS02	VSM	0 ~ 1	0	0
SYS03	CLR TEMP	0 ~ 1	1	1
SYS04	THEATER	0 ~ 1	1	1
SYS05	THEA PRO	0 ~ 1	1	1
SYS06	GAME MD	0 ~ 1	0	0
SYS07	AHS	0 ~ 1	0	0
SYS08	HYPER SR	0 ~ 1	1	1
SYS09	BBE	0 ~ 1	0	0
SYS10	S SOUND	0 ~ 1	1	1
SYS11	16:9 MD	0 ~ 1	1	1
SYS12	S CCD	0 ~ 1	1	1
SYS13	ID DISP	0 ~ 1	1	0
SYS14	CH LABEL	0 ~ 1	1	1
SYS15	V LABEL	0 ~ 1	1	1
SYS16	W CLOCK	0 ~ 1	1	1
SYS17	PIM	0 ~ 1	1	1
SYS18	PURITY	0 ~ 1	0	0
SYS19	VOL MUTE	0 ~ 1	0	0
SYS20	VCHIP	0 ~ 1	1	0
SYS21	VCHIP CA	0 ~ 1	1	0
SYS22	CCD	0 ~ 1	1	1
SYS23	HYPSCAN	0 ~ 1	1	1
SYS24	JVC LOGO	0 ~ 1	1	1
SYS25	PANORAMA	0 ~ 1	0	0

4.8 ADJUSTMENT PROCEDURE

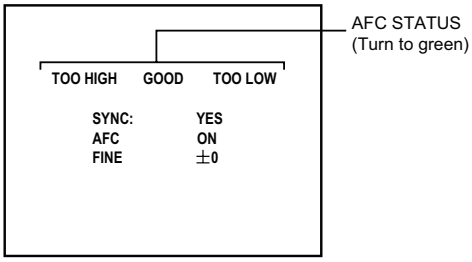
4.8.1 CHECK ITEM

Item	Measuring instrument	Test point	Adjustment part	Description
B1 VOLTAGE	Signal generator DC voltmeter	TP-91(R927) TP-E (IC421 Heatsink) [MAIN PWB]		(1) Receive the black and white signal. (color off) (2) Connect the DC voltmeter to the TP-E and TP-91. (3) Confirm that the voltage is DC134V±2V.
HIGH VOLTAGE HOLD DOWN	Resistor	X connector 1-pin 3-pin [MAIN PWB]		• After reparing the high voltage hold down circuit. This circuit shall be checked to operate correctly. (1) Turn the power switch to on. (2) Refer to the figure, connect the resistor between X connector 1-pin and 3-pin. (3) Make sure that the screen picture disappeares. (4) Disconnect the power plug. (5) Remove the resistor. (6) Again connect the power plug. (7) Turn the power switch to on. (8) Make sure that the normal picture is displayed on the screen.



4.8.2 TUNER / IF CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
IF VCO	Remote control unit		[9.VCO] CW transf. (T111) [MAIN PWB]	• It must not adjust without inputting the RF signal. (1) Receive any broadcast. (2) Select 9.VCO from the SERVICE MODE. (3) Change the "AFC" to "OFF" and "FINE" to "0". (4) Confirm that the color change from "TOO HIGH" to "TOO LOW" by CW transf. on MAIN PWB, and check the "SYNC" is "YES". (5) Adjust CW transf. until "GOOD" letters turns green. And then confirm that the "SYNC" is "YES" again. Adjustment can be done in this statement. (6) It return the "AFC" to "ON". (7) Push the [EXIT] key to exit the 9.VCO.



4.8.3 FOCUS

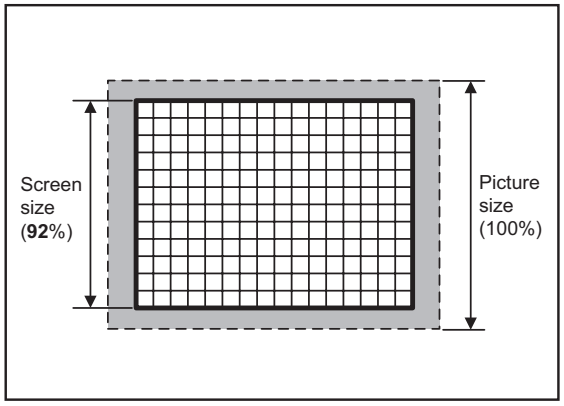
Item	Measuring instrument	Test point	Adjustment part	Description
FOCUS	Signal generator		FOCUS VR [In HVT]	(1) Receive the cross-hatch signal. (2) While watching at the screen, adjust the FOCUS VR to the vertical and horizontal lines will be thinnest and sharpest center horizontal line. (3) Make sure that the picture is in focus even when the screen gets darkened.

4.8.4 DEFLECTION CIRCUIT

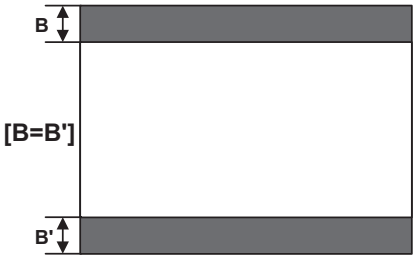
- The setting (adjustment) using the remote control unit is made on the basis of the initial setting values.
- The setting values which adjust the screen to the optimum condition can be different from the initial setting values.

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>V. SIZE /
V. POSITION
(4:3)</td><td>Signal generator

Remote control unit</td><td></td><td>[2.DEF (D)]
D05: V PHASE
D07: V SIZE
D13:V LIN
D11:VS CORR

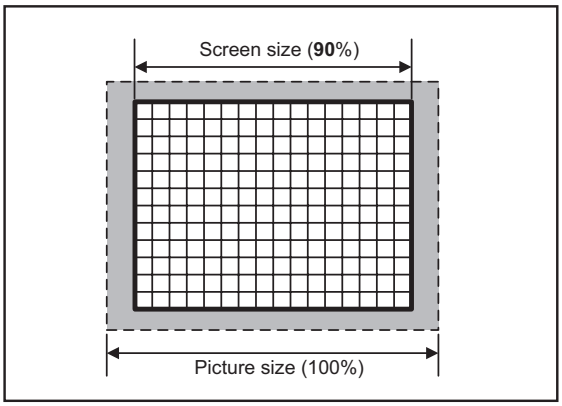
V. CENTER SW (S401)
[MAIN PWB]</td><td rowspan="2">(1) Receive the cross-hatch signal.
(2) Select 2.DEF(D) from the SERVICE MODE.
(3) Select the < D05 > (V PHASE).
(4) Check that the value of < D05 > is 0.
(5) Adjust the vertical screen size of the visible screen top to 92% with the < D07 > (V SIZE) and V CENTER SW.
NOTE :
• Bottom is to be located within 85%~95% range.
• When vertical linearity is not even, adjust vertical linearity by < D13 > (V LIN) and < D11 > (VS CORR).</td></tr>
<tr><td colspan="4"> 

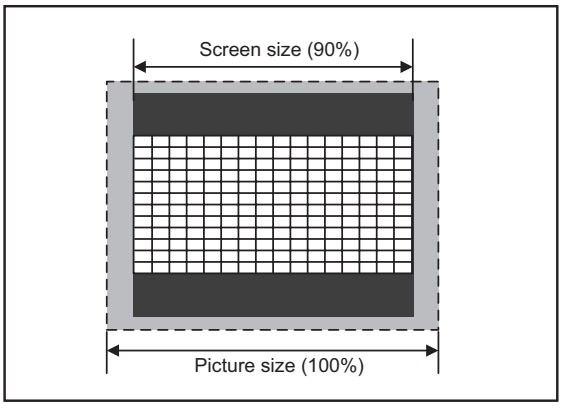
<table>
<tr><th>Setting item</th><th>Initial setting value</th></tr>
<tr><td>D05: V PHASE</td><td>0</td></tr>
<tr><td>D07: V SIZE</td><td>55</td></tr>
</table></td></tr>
<tr><td>V. SIZE /
V. POSITION
(16:9)</td><td>Signal generator

Remote control unit</td><td></td><td>[2.DEF (D)]
D08: V. SIZE+-
D14: V. LIN+-</td><td rowspan="2">• V. SIZE / V. POSITION (4:3) adjustment should be finished.
(1) Receive the black and white signal (color off).
(2) Select 16:9 mode.
(3) Confirm that the width of V. BLANKING is equal to adjustment value (B).
(4) If the adjustment is not correct, select 2.DEF(D) from the SERVICE MODE.
(5) Then adjust the < D08 > (V. SIZE+-) and < D14 > (V. LIN+-) to be same to adjustment value (B).
NOTE :
• When you change the VERTICAL adjustment value of the regular mode (4:3), confirm the adjustment of 16:9 mode again.
<table><tr><th>Setting item</th><th>Initial setting value</th></tr><tr><td>D08: V SIZE+-</td><td>-26</td></tr><tr><td>D14: V LIN+-</td><td>0</td></tr></table></td></tr>
<tr><td colspan="4"> 

<table>
<tr><th>Adjust point</th><th>Setting value</th></tr>
<tr><td>B</td><td>67mm</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>H. SIZE /
H. POSITION /
SIDE PIN
(4:3)</td><td>Signal generator

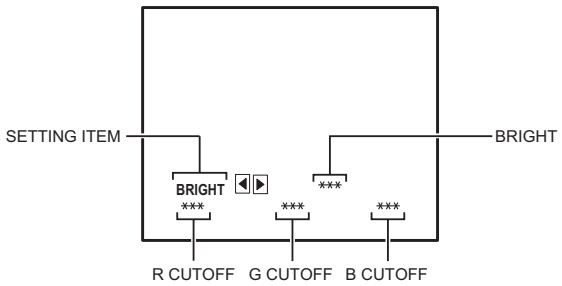
Remote control unit</td><td></td><td>[2.DEF (D)]
D03: H POSI
D15: H SIZE
D23: EW PARA
D19: EWCR TOP
D21: EWCR BTM</td><td rowspan="2">• V. SIZE / V. POSITION adjustment should be finished.
(1) Receive a cross-hatch signal.
(2) Select 2.DEF(D) from the SERVICE MODE.
(3) Select the < D03 > (H POSI).
(4) Adjust by H. POSITION to be same size at both side.
(5) Adjust the horizontal size of the visible screen to 90% with the < D15 > (H. SIZE).
(6) Adjust the vertical line at both side to become linear line by < D23 > (EW PARA).
(7) Confirm the linearity of vertical line and horizontal size.
(8) If it is necessary, readjust 1.~7.
NOTE :
• If it is not straight at the vertical upper and bottom corner line adjust the upper and bottom corner pin by < D19 > (EWCR TOP) and < D21 > (EWCR BTM).</td></tr>
<tr><td colspan="4"> 
</td></tr>
<tr><td>H. POSITION /
H. SIZE /
SIDE PIN
(16:9)</td><td>Signal generator

Remote control unit</td><td></td><td>[2.DEF (D)]
D16: H SIZE+-
D04: H POSI+-
D24: EW PAR+-
D20: EWCR T+-
D22: EWCR B+-</td><td rowspan="2">• V. SIZE / V. POSITION adjustment should be finished.
• H. SIZE / H. POSITION / SIDE PIN adjustment should be finished. (Regular size(4:3)).
(1) Receive the cross-hatch signal.
(2) Select 16:9 mode.
(3) Confirm both sides of cross-hatch to be the adjustment value 90%.
(4) If it not correct, select 2.DEF(D) from the SERVICE MODE.
(5) Adjust to be value 90% at the < D16 > (H SIZE+-) and < D04 > (H POSI+-).
(6) Confirm the second vertical line from left to right to be straight.
(7) If it is not straight, adjust to be straight by < D24 > (EW PAR+-), < D20 > (EWCR T+-) and < D22 > (EWCR B+-).
NOTE :
• Review the adjustment of 16:9 mode again when you change the SIDE PIN adjustment value of regular (4:3) mode.</td></tr>
<tr><td colspan="4"> 
</td></tr>
</table>

4.8.5 VIDEO CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
WHITE BALANCE (LOW LIGHT)	Signal generator Remote control unit		[1.V/C (S)] S01: BRIGHT S11: R CUTOFF S12: G CUTOFF S13: B CUTOFF [7.LOW LIGHT] SCREEN VR [in HVT]	(1) Receive the black and white signal (color off). (2) Set the VIDEO STATUS to STANDARD. (3) Set the COLOR TEMPERATURE to LOW. (4) Select the 1.V/C (S) from the SERVICE MODE. (5) Set the initial setting value of < S11 > (R CUTOFF), < S12 > (G CUTOFF), < S13 > (B CUTOFF) and < S01 > (BRIGHT). (6) Return to the main menu in the SERVICE MODE. (7) Select the 7.LOW LIGHT from the SERVICE MODE. (8) Display a single horizontal line by pressing the [1] key. (9) Turn the SCREEN VR all the way to the left. (10) Turn the SCREEN VR gradually to the right from the left until either one of the red, blue or green colors appears faintly. (11) Adjust the two colors which did not appear until the single horizontal line that is displayed becomes white using the [4]~[9] keys. (12) Turn the SCREEN VR until the single horizontal line is displayed faintly. (13) Press the [2] key to cancel the single horizontal line mode. (14) Return to the main menu in the SERVICE MODE. (15) Select the 1.V/C (S) from the SERVICE MODE. (16) Adjust the BRIGHT level to become the black component shines white slightly by < S01 >. (17) Confirm that whether the color ingredient of R, G, or B is visible to the black component, which shines white slightly. (18) When the color ingredient can be seen, two colors other than a visible color are adjusted, and it is made to look white. (19) Return the value of < S01 > to initial setting value. • The [3] (EXIT) key is the cancel key for the WHITE BALANCE.

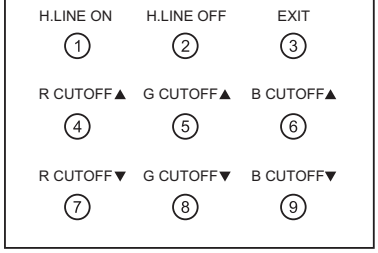
LOW LIGHT adjustment mode



SINGLE HORIZONTAL LINE

Setting item	Initial setting value
S11: R CUT OFF	30
S12: G CUT OFF	30
S13: B CUT OFF	30
S01: BRIGHT	64

REMOTE CONTROL UNIT

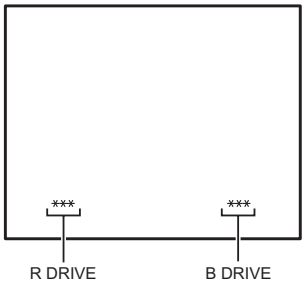


<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>WHITE BALANCE (HIGH LIGHT)</td><td>Signal generator

Remote control unit</td><td></td><td>[1.V/C (S)]
S14: R DRIVE
S15: B DRIVE

[8.HIGH LIHGT]</td><td rowspan="3">(1) Receive the black-and-white signal (color off).
(2) Set the VIDEO STATUS to STANDARD.
(3) Set the COLOR TEMPERATURE to LOW.
(4) Select the 1.V/C (S) from the SERVICE MODE.
(5) Set the initial setting value of < S14 > (R DRIVE) and < S15 > (B DRIVE).
(6) Return to the main menu in the SERVICE MODE.
(7) Select the 8.HIGH LIGHT from the SERVICE MODE.
(8) Adjust the screen until it becomes white using the [4] , [6], [7] and [9] keys.

• The [3] (EXIT) key is the cancel key for the WHITE BALANCE.

REMOTE CONTROL UNIT
EXIT
① ② ③
R DRIVE▲ B DRIVE▲
④ ⑤ ⑥
R DRIVE▼ B DRIVE▼
⑦ ⑧ ⑨</td></tr>
<tr><td colspan="4">HIGH LIGHT adjustment mode
 

<table><tr><th>Setting item</th><th>Initial setting value</th></tr><tr><td>S14: R DRIVE</td><td>64</td></tr><tr><td>S15: B DRIVE</td><td>64</td></tr></table></td></tr>
<tr><td>SUB BRIGHT</td><td>Remote control unit</td><td></td><td>[1.V/C (S)]
S01: BRIGHT</td><td rowspan="2">(1) Receive any broadcast.
(2) Set the VIDEO STATUS to STANDARD.
(3) Select the 1.V/C (S) from the SERVICE MODE.
(4) Select < S01 > (BRIGHT).
(5) Set the initial setting value of the < S01 >.
(6) If the brightness is not the best with the initial setting value, make fine adjustment of the < S01 > until you get the optimum brightness.</td></tr>
<tr><td colspan="4"><table><tr><th>Setting item</th><th>Initial setting value</th></tr><tr><td>S01: BRIGHT</td><td>64</td></tr></table></td></tr>
<tr><td>SUB CONTRAST</td><td>Remote control unit</td><td></td><td>[1.V/C (S)]
S02: PICTURE</td><td rowspan="2">(1) Receive any broadcast.
(2) Set the VIDEO STATUS to STANDARD.
(3) Select the 1.V/C (S) from the SERVICE MODE.
(4) Select < S02 > (PICTURE).
(5) Set the initial setting value of the < S02 >.
(6) If the contrast is not the best with the initial setting value, make fine adjustment of the < S02 > until you get the optimum contrast.</td></tr>
<tr><td colspan="4"><table><tr><th>Setting item</th><th>Initial setting value</th></tr><tr><td>S02: PICTURE</td><td>65</td></tr></table></td></tr>
</table>

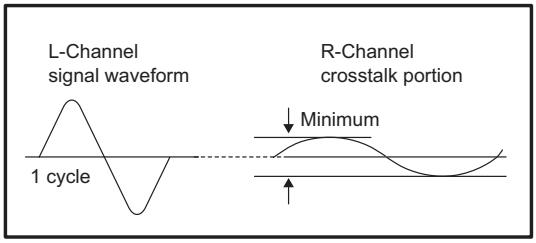
4.8.6 MTS CIRCUIT

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>MTS INPUT LEVEL</td><td>Remote control unit</td><td></td><td>[3.SOUND (A)]
A01: IN LEVEL</td><td>(1) Receive any broadcast.
(2) Select the 3.SOUND (A) from the SERVICE MODE.
(3) Select the < A01 > (IN LEVEL).
(4) Set the initial setting value of the < A01 >.

<table><tr><th>Setting item</th><th>Initial setting value</th></tr><tr><td>A01: IN LEVEL</td><td>12</td></tr></table></td></tr>
<tr><td>MTS SEPARATION</td><td>TV audio multiplex signal generator

Oscilloscope

Remote control unit</td><td>R OUT
L OUT
[AUDIO OUT]</td><td>[3.SOUND (A)]
A02: LOW SEP.
A03: HI SEP.</td><td rowspan="2">(1) Input the stereo L signal (300Hz) from the TV audio multiplex signal generator to the antenna terminal.
(2) Connect an oscilloscope to R OUT pin of the AUDIO OUT, and display one cycle portion of the 300Hz signal.
(3) Select the 3.SOUND (A) from the SERVICE MODE.
(4) Select the < A02 > (LOW SEP.).
(5) Set the initial setting value of the < A02 >.
(6) Adjust the < A02 > so that the stroke element of the 300Hz signal will become minimum.
(7) Change the connection of the oscilloscope to L OUT pin of the AUDIO OUT, and enlarge the voltage axis.
(8) Change the signal to 3kHz, and similarly adjust the < A03 > (HI SEP.).

<table><tr><th>Setting item</th><th>Initial setting value</th></tr><tr><td>A02: LOW SEP</td><td>39</td></tr><tr><td>A03: HI SEP</td><td>16</td></tr></table></td></tr>
<tr><td colspan="4"> 
</td></tr>
</table>

SECTION 5
TROUBLESHOOTING

This service manual does not describe TROUBLESHOOTING.

JVC SERVICE & ENGINEERING COMPANY OF AMERICA

DIVISION OF JVC AMERICAS CORP.

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JVC CANADA INC.

Head office : 21 Finchdene Square Scarborough, Ontario M1X 1A7 (416)293-1311

JVC®

(No.YA052)

Printed in Japan
WPC

PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety . Whenever replacing these parts, be sure to use specified ones to secure the safety.
- The parts not indicated in this Parts List and those which are filled with lines --- in the Parts No. columns will not be supplied.
- P.W. BOARD Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied.

ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
CR	Carbon Resistor	C CAP.	Ceramic Capacitor
FR	Fusible Resistor	E CAP.	Electrolytic Capacitor
PR	Plate Resistor	M CAP.	Mylar Capacitor
VR	Variable Resistor	CH CAP.	Chip Capacitor
HV R	High Voltage Resistor	HV CAP.	High Voltage Capacitor
MF R	Metal Film Resistor	MF CAP.	Metalized Film Capacitor
MG R	Metal Glazed Resistor	MM CAP.	Metalized Mylar Capacitor
MP R	Metal Plate Resistor	MP CAP.	Metalized Polystyrol Capacitor
OM R	Metal Oxide Film Resistor	PP CAP.	Polypropylene Capacitor
CMF R	Coating Metal Film Resistor	PS CAP.	Polystyrol Capacitor
UNF R	Non-Flammable Resistor	TF CAP.	Thin Film Capacitor
CH V R	Chip Variable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH MG R	Chip Metal Glazed Resistor	TAN. CAP.	Tantalum Capacitor
COMP. R	Composition Resistor	CH C CAP.	Chip Ceramic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
		CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

RESISTORS									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% -0%

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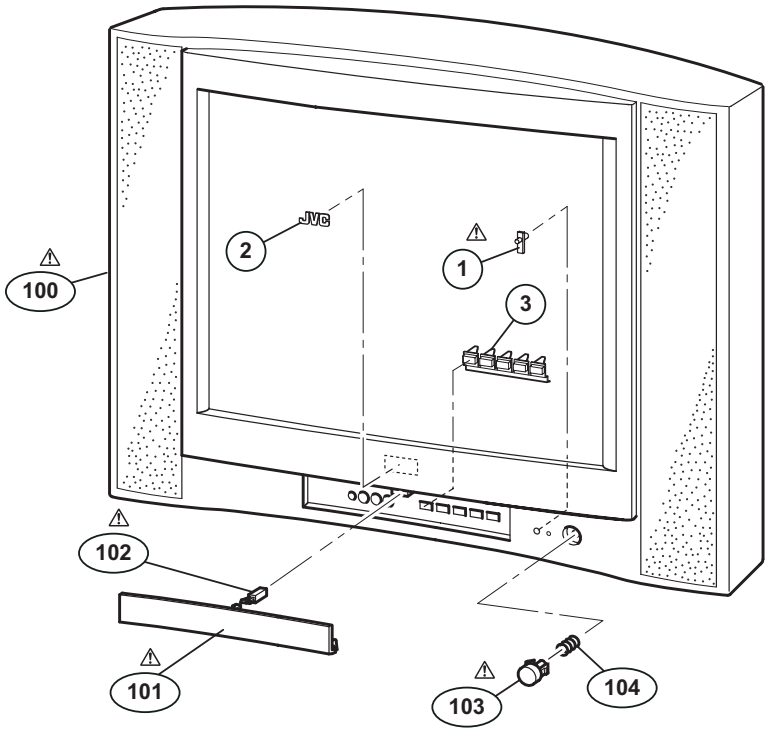
USING P.W. BOARD & REMOTE CONTROL UNIT

P.W.B ASS'Y	AV-20F475/S	AV-N21F45/S
MAIN P.W.B	SFJ-1011A-M2	SFJ-1012A-M2
REMOTE CONTROL UNIT	RM-C1258G-1H	←

EXPLODED VIEW PARTS LIST -1

⚠	Ref.No.	Part No.	Part Name	Description	Local
⚠	1	LC32242-001A-A	RC LENS		
	2	CM48006-010-C	JVC MARK		
	3	GQ30025-002A-A	CONTROL KNOB		
⚠	100	GQ10063-003B-A	FRONT CABINET ASSY	Inc.No.101-104	AV-20F475/S
⚠	100	GQ10063-004A-A	FRONT CABINET ASSY	Inc.No.101-104	AV-N21F45/S
⚠	101	GQ20006-001B-A	DOOR		
⚠	102	CM48229-00A-C	DOOR LATCH		
⚠	103	LC32240-001A-A	POWER KNOB		
	104	CM36481-002A-A	SPRING		

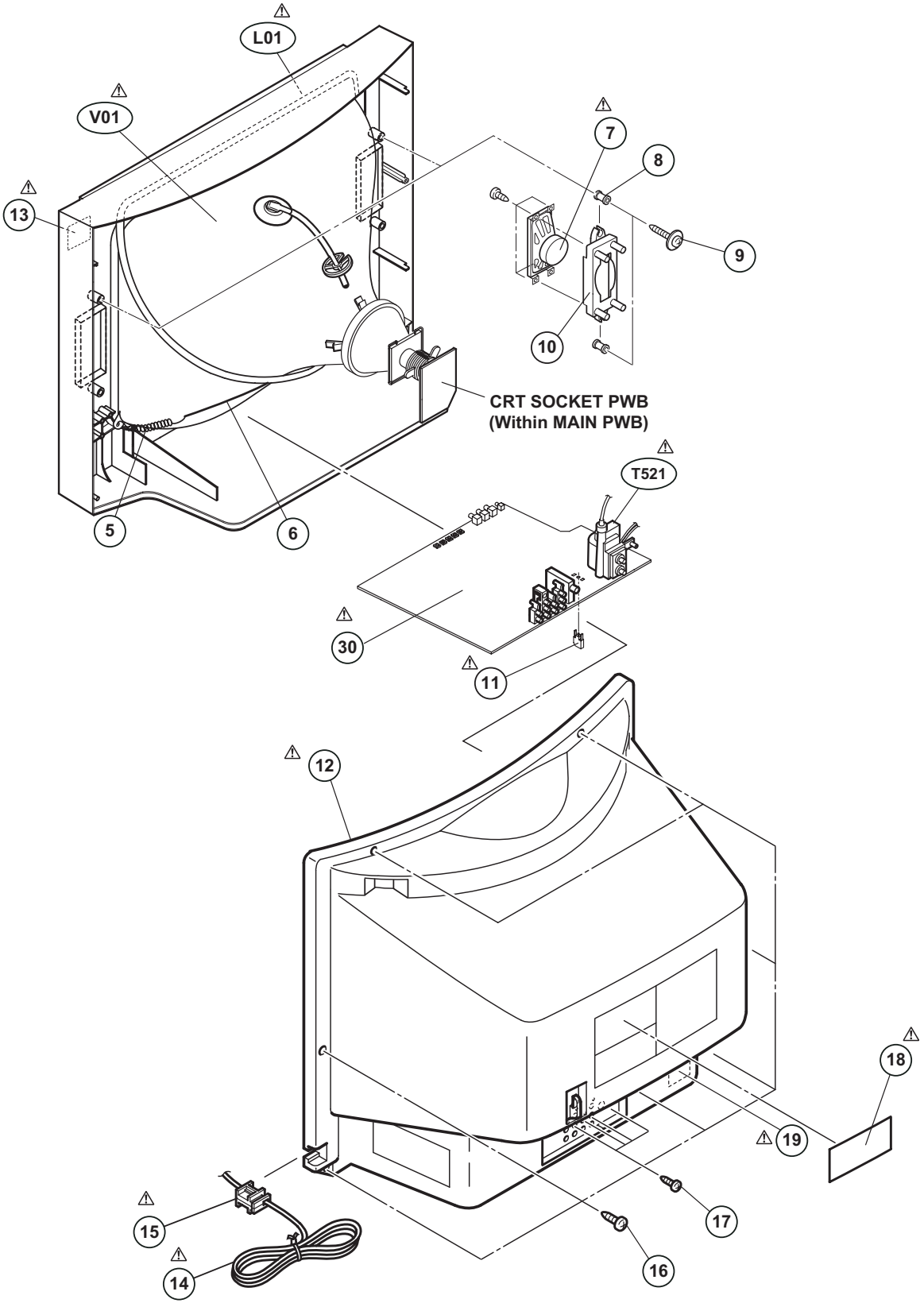
EXPLODED VIEW -1



EXPLODED VIEW PARTS LIST -2

⚠	Ref.No.	Part No.	Part Name	Description	Local
⚠	V01	A51QDX993X001	ITC	Inc.DEF YOKE/PC MAGNET/WEDGE	
⚠	L01	QQW0118-001	DEG COIL		
⚠	T521	QQH0128-001	FB TRANSF		
	5	A48457-4-S	SPRING		
	6	CHGB0016-0H	BRAIDED ASSY		
⚠	7	QAS0131-001	SPEAKER	SP01/SP02(x2)	
	8	LC40226-003A-H	SPACER	(x4)	
	9	LC41029-001B-A	TAPPING SCREW	(x4)	
	10	LC21261-001B-A	SP HOLDER	(x2)	
⚠	11	CM48144-001-A	PB STOPPER		
⚠	12	GQ10061-001A-A	REAR COVER		
⚠	13	GQ40041-001A-A	WARNING LABEL		
⚠	14	QMPD390-200-JS	POWER CORD(US/CA)	2m BLACK	
⚠	15	LC20106-001D-A	POWER CORD CLAMP		
	16	QYSBSFG4016Z	TAP SCREW	4.0mm x 16mm(x7)	
	17	QYSBSB3010Z	TAP SCREW	3.0mm x 10mm(x4)	
⚠	18	GQ30032-001A-A	RATING LABEL		AV-20F475/S
⚠	18	GQ20001-001A-A	RATING LABEL		AV-N21F45/S
⚠	19	GQ30034-001B-A	WARNING LABEL		
⚠	30	SFJ-1011A-M2	MAIN PWB	Inc. CRT SOCKET PWB	AV-20F475/S
⚠	30	SFJ-1012A-M2	MAIN PWB	Inc. CRT SOCKET PWB	AV-N21F45/S

EXPLODED VIEW -2



PRINTED WIRING BOARD PARTS LIST [AV-20F475/S]

MAIN P.W. BOARD ASS'Y (SFJ-1011A-M2)

⚠Ref No.	Part No.	Part Name	Description	Local
IC101	M52342FP-X	IC		
IC201	TM8812CSDNG5DB9	IC(MCU)		
IC251	TC90A49AP	IC		
IC421	AN5522	IC		
IC602	TFA9842J/N1	IC		
IC641	CXA2205Q-X	IC		
IC702	AT24C08-20F475	IC	(SERVICE)	
IC703	S-80840CNY-T	IC		
IC704	AN78L05-T	IC		
IC751	GP1UM281QK	IR DETECT UNIT	38kHz	
IC851	TA1218AN	IC		
IC901	STR-G5624A/F8	IC		
IC921	L7809CP	IC		
IC922	L7805CP	IC		
Q001	UN2212-X	TRANSISTOR		
Q101	2SC5083/L-P/-T	TRANSISTOR		
Q131	2SA1530A/QR/-X	TRANSISTOR		
Q161	2SC3928A/QR/-X	TRANSISTOR		
Q211	2SC3928A/QR/-X	TRANSISTOR		
Q232	2SC3928A/QR/-X	TRANSISTOR		
Q233	2SC3928A/QR/-X	TRANSISTOR		
Q251	2SC3928A/QR/-X	TRANSISTOR		
Q252	2SC3928A/QR/-X	TRANSISTOR		
Q281	2SA1530A/QR/-X	TRANSISTOR		
Q282	2SC3928A/QR/-X	TRANSISTOR		
Q283	2SA1530A/QR/-X	TRANSISTOR		
Q291	2SA1530A/QR/-X	TRANSISTOR		
Q292	2SC3928A/QR/-X	TRANSISTOR		
Q293	2SA1530A/QR/-X	TRANSISTOR		
Q301	2SC4075/DE/YA11	POW TRANSISTOR		
Q311	2SC4075/DE/YA11	POW TRANSISTOR		
Q321	2SC4075/DE/YA11	POW TRANSISTOR		
Q331	2SA1530A/QR/-X	TRANSISTOR		
Q352	2SD601A/QR/-X	TRANSISTOR		
Q501	2SC4212/Z1/	TRANSISTOR		
⚠Q521	2SD2634-YD	TRANSISTOR	H.OUT	
Q623	2SA1530A/QR/-X	TRANSISTOR		
Q625	2SC3928A/QR/-X	TRANSISTOR		
Q681	2SC3928A/QR/-X	TRANSISTOR		
Q682	2SC3928A/QR/-X	TRANSISTOR		
Q683	2SC3928A/QR/-X	TRANSISTOR		
Q684	2SC3928A/QR/-X	TRANSISTOR		
Q701	2SA1530A/QR/-X	TRANSISTOR		
Q751	UN2112-X	TRANSISTOR		
Q851	2SA1530A/QR/-X	TRANSISTOR		
Q921	2SD1383K/AB/-X	SI TRANSISTOR		
Q922	2SC2785/JH/-T	SI TRANSISTOR		
Q923	2SA1530A/QR/-X	TRANSISTOR		
Q924	2SA1208/ST/Z1-T	TRANSISTOR		
D331	1SS133-T2	DIODE		
D332	1SS133-T2	DIODE		
D333	1SS133-T2	DIODE		
D334	1SS133-T2	DIODE		
D352	MTZJ9.1C-T2	Z DIODE		
D353	1SS133-T2	DIODE		
D365	1SS133-T2	DIODE		
D366	1SS133-T2	DIODE		
D367	1SS133-T2	DIODE		
D368	MTZJ5.1B-T2	Z DIODE		
D369	MTZJ5.1B-T2	Z DIODE		
D370	MTZJ5.1B-T2	Z DIODE		
D401	1SR35-400A-T2	SI DIODE		
D402	MTZJ75-T2	Z DIODE		
D501	MTZJ3.3A-T2	Z DIODE		
D521	1SR35-400A-T2	SI DIODE		
D522	RH1S-T3	SI DIODE		
D523	1SR35-400A-T2	SI DIODE		
D524	RGP10J-04TS-T3	SI DIODE		
D525	MTZJ5.6A-T2	Z DIODE		
D526	MA4068N/Z1/-T2	Z DIODE		
D621	1SS133-T2	DIODE		
D622	1SS133-T2	DIODE		
D623	1SS133-T2	DIODE		
D681	MTZJ9.1C-T2	Z DIODE		
D682	MTZJ9.1C-T2	Z DIODE		
D683	MTZJ9.1C-T2	Z DIODE		
D684	MTZJ9.1C-T2	Z DIODE		
D685	MTZJ9.1C-T2	Z DIODE		
D686	MTZJ9.1C-T2	Z DIODE		
D687	MTZJ9.1C-T2	Z DIODE		
D688	MTZJ9.1C-T2	Z DIODE		
D705	1SS133-T2	DIODE		
D751	LG22440	LED	POWER/ON TIMER	
D801	MTZJ9.1C-T2	Z DIODE		
D802	MTZJ9.1C-T2	Z DIODE		
D803	MTZJ9.1C-T2	Z DIODE		
D804	MTZJ9.1C-T2	Z DIODE		
D807	MTZJ9.1C-T2	Z DIODE		
D831	MTZJ9.1C-T2	Z DIODE		
D832	MTZJ9.1C-T2	Z DIODE		
D833	MTZJ9.1C-T2	Z DIODE		
D834	MTZJ9.1C-T2	Z DIODE		
D901	GSIB460-S1	DIODE BRIDGE		
D902	RGP10J-04TS-T3	SI DIODE		
D903	RGP10J-04TS-T3	SI DIODE		
D904	RGP10J-04TS-T3	SI DIODE		
D905	SARS01-T2	SI DIODE		
D907	MA700A-T2	SB DIODE		
D908	MTZJ15C-T2	Z DIODE		
D921	RGP10J-04TS-T3	SI DIODE		
D922	RGP10J-04TS-T3	SI DIODE		
D923	RGP10J-04TS-T3	SI DIODE		
D924	RGP10J-04TS-T3	SI DIODE		
D925	1SS133-T2	DIODE		
D926	RU3AM-LFC4	SI DIODE		
D927	21DQ10N-T3	SB DIODE		
D928	RU3YX-LFC4	SI DIODE		
D929	MTZJ7.5A-T2	Z DIODE		
D930	1SS133-T2	DIODE		
D931	1SS133-T2	DIODE		
D932	MTZJ33B-T2	Z DIODE		
D933	1N4002G-T2	FR DIODE		
C001	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M	
C002	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C003	QETN1VM-476Z	E CAPACITOR	47uF 35V M	
C004	QETN0JM-477Z	E CAPACITOR	470uF 6.3V M	
C005	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C101	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C102	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C104	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C105	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C106	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C107	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C113	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C114	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C116	NCB31CK-224X	C CAPACITOR	0.22uF 16V K	
C119	NDC31HJ-681X	C CAPACITOR	680pF 50V J	
C120	QETN1HM-474Z	E CAPACITOR	0.47uF 50V M	
C124	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C131	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C161	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C162	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C163	NDC31HJ-470X	C CAPACITOR	47pF 50V J	
C164	NDC31HJ-470X	C CAPACITOR	47pF 50V J	
C165	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C166	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C167	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C202	QETN1HM-105Z	E CAPACITOR	1uF 50V M	
C203	NCB31HK-152X	C CAPACITOR	1500pF 50V K	
C211	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C221	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C222	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C223	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C233	NDC31HJ-680X	C CAPACITOR	68pF 50V J	
C237	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C241	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C243	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C244	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C247	QETN1HM-225Z	E CAPACITOR	2.2uF 50V M	
C252	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C253	NDC31HJ-470X	C CAPACITOR	47pF 50V J	
C254	NDC31HJ-181X	C CAPACITOR	180pF 50V J	
C261	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C262	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C263	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C264	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C265	QETN1HM-474Z	E CAPACITOR	0.47uF 50V M	
C266	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C267	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C268	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C269	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C270	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C272	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	

⚠Ref No.	Part No.	Part Name	Description	Local
C273	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C274	NDC31HJ-181X	C CAPACITOR	180pF 50V J	
C275	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C276	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C277	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C278	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C283	NDC31HJ-330X	C CAPACITOR	33pF 50V J	
C293	NDC31HJ-470X	C CAPACITOR	47pF 50V J	
C302	NDC31HJ-331X	C CAPACITOR	330pF 50V J	
C312	NDC31HJ-271X	C CAPACITOR	270pF 50V J	
C322	NDC31HJ-271X	C CAPACITOR	270pF 50V J	
C331	QETN1AM-227Z	E CAPACITOR	220uF 10V M	
C341	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C343	QCZ0121-102	C CAPACITOR	1000pF 3KV	
C352	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C354	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C361	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C362	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C401	QFVF1HJ-474Z	MF CAPACITOR	0.47uF 50V J	
C402	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C403	QENC1CM-336Z	BP E CAPACITOR	33uF 16V M	
C404	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C405	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C406	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C407	QETN1VM-107Z	E CAPACITOR	100uF 35V M	
C409	QFLC2AK-104Z	M CAPACITOR	0.1uF 100V K	
C410	QFLC2AK-104Z	M CAPACITOR	0.1uF 100V K	
C411	QETM1VM-228	E CAPACITOR	2200uF 35V M	
C412	QETN1HM-105Z	E CAPACITOR	1uF 50V M	
C501	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C502	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C503	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C504	QETN1HM-225Z	E CAPACITOR	2.2uF 50V M	
C505	NCB31AK-474X	C CAPACITOR	0.47uF 10V K	
C506	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C507	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C508	QCB32HK-151Z	C CAPACITOR	150pF 500V K	
C509	QCB32HK-331Z	C CAPACITOR	330pF 500V K	
C510	QETN2EM-225Z	E CAPACITOR	2.2uF 250V M	
C521	QCZ0325-821	C CAPACITOR	820pF 2kV K	
C522	QFZ0198-562	MPP CAPACITOR	5600pF 1.5KV	
C523	QFZ0197-404	MPP CAPACITOR	0.4uF 250V J	
C524	QCB32HK-561Z	C CAPACITOR	560pF 500V K	
C525	QEZ0203-107	E CAPACITOR	100uF 160V M	
C526	QFLC1HJ-823Z	M CAPACITOR	0.082uF 50V J	
C527	QETN2EM-106Z	E CAPACITOR	10uF 250V M	
C528	QETN1VM-108Z	E CAPACITOR	1000uF 35V M	
C529	QETN1VM-476Z	E CAPACITOR	47uF 35V M	
C530	QFLC2AJ-103Z	M CAPACITOR	0.01uF 100V J	
C621	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C622	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C627	NCF21CZ-105X	C CAPACITOR	1uF 16V Z	
C628	QETN1HM-226Z	E CAPACITOR	22uF 50V M	
C629	NCF21CZ-105X	C CAPACITOR	1uF 16V Z	
C630	QETN1EM-227Z	E CAPACITOR	220uF 25V M	
C632	QETN1EM-108Z	E CAPACITOR	1000uF 25V M	
C633	QETN1EM-227Z	E CAPACITOR	220uF 25V M	
C634	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C636	QETN1HM-225Z	E CAPACITOR	2.2uF 50V M	
C637	QETN1EM-108Z	E CAPACITOR	1000uF 25V M	
C638	QETN1EM-108Z	E CAPACITOR	1000uF 25V M	
C641	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C642	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C643	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C644	NCB31HK-562X	C CAPACITOR	5600pF 50V K	
C645	NCB31HK-123X	C CAPACITOR	0.012uF 50V K	
C646	QETN1HM-105Z	E CAPACITOR	1uF 50V M	
C647	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M	
C648	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C649	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M	
C650	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C651	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C652	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C653	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M	
C654	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C655	NCB31HK-272X	C CAPACITOR	2700pF 50V K	
C656	NCB31HK-473X	C CAPACITOR	0.047uF 50V K	
C657	QETN1HM-335Z	E CAPACITOR	3.3uF 50V M	
C658	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C659	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C660	QETN1HM-105Z	E CAPACITOR	1uF 50V M	
C661	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C662	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C663	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C664	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C665	QETN1CM-227Z	E CAPACITOR	220uF 16V M	
C666	NCB31HK-223X	C CAPACITOR	0.022uF 50V K	
C667	NCB31HK-472X	C CAPACITOR	4700pF 50V K	
C668	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C669	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C670	NCB31HK-472X	C CAPACITOR	4700pF 50V K	
C671	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C672	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C681	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C682	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C683	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C684	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C685	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C686	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C687	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C688	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C689	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C701	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C702	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C703	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C704	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C705	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C708	NDC31HJ-220X	C CAPACITOR	22pF 50V J	
C709	NDC31HJ-220X	C CAPACITOR	22pF 50V J	
C711	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C712	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C713	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C751	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C801	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C802	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C803	QETN1HM-105Z	E CAPACITOR	1uF 50V M	
C804	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C807	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C815	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C831	NCB31AK-334X	C CAPACITOR	0.33uF 10V K	
C832	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C833	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C834	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C851	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C852	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C853	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C854	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C855	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C856	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C857	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C858	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C859	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C860	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C861	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C862	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
⚠C901	QFZ9072-104	MM CAPACITOR	0.1uF AC250V K	
⚠C902	QFZ9072-104	MM CAPACITOR	0.1uF AC250V K	
C903	QEZ0376-477	E CAPACITOR	470uF 200V M	
⚠C904	QCZ9054-102	C CAPACITOR	1000pF AC250V Z	
⚠C905	QCZ9054-102	C CAPACITOR	1000pF AC250V Z	
C907	QETN1HM-476Z	E CAPACITOR	47uF 50V M	
C908	QCZ0340-222	C CAPACITOR	2200pF 2kV K	
C909	NCB31HK-122X	C CAPACITOR	1200pF 50V K	
C910	NDC31HJ-471X	C CAPACITOR	470pF 50V J	
C911	QFP32GJ-103Z	PP CAPACITOR	0.01uF 400V J	
C921	QETN1EM-477Z	E CAPACITOR	470uF 25V M	
C923	QEZ0203-107	E CAPACITOR	100uF 160V M	
C924	QETN2CM-476Z	E CAPACITOR	47uF 160V M	
C925	QETN1CM-108Z	E CAPACITOR	1000uF 16V M	
C926	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C927	QETN1EM-477Z	E CAPACITOR	470uF 25V M	
C929	QCZ0340-102	C CAPACITOR	1000pF 2kV K	
C930	QCB32HK-102Z	C CAPACITOR	1000pF 500V K	
C931	QCB32HK-102Z	C CAPACITOR	1000pF 500V K	
C932	QETN0JM-107Z	E CAPACITOR	100uF 6.3V M	
C933	QETN1VM-476Z	E CAPACITOR	47uF 35V M	
C935	QETN1CM-476Z	E CAPACITOR	47uF 16V M	
C940	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C941	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C942	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C943	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C944	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C945	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
⚠C991	QCZ9074-103	C CAPACITOR	0.01uF AC250V M	
⚠C992	QCZ9074-103	C CAPACITOR	0.01uF AC250V M	
R003	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R004	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R005	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R006	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R008	NRSA63J-820X	MG RESISTOR	82Ω 1/16W J	
R101	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R102	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	
R103	QRE121J-101Y	C RESISTOR	100Ω 1/2W J	

⚠Ref No.	Part No.	Part Name	Description Local
R104	NRSA63J-180X	MG RESISTOR	18Ω 1/16W J
R105	NRSA63J-270X	MG RESISTOR	27Ω 1/16W J
R111	NRSA63J-394X	MG RESISTOR	390kΩ 1/16W J
R112	NRSA63J-334X	MG RESISTOR	330kΩ 1/16W J
R113	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R115	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R116	NRSA63J-680X	MG RESISTOR	68Ω 1/16W J
R117	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J
R121	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J
R122	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R131	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R132	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J
R133	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J
R134	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R135	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J
R161	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R163	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R164	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R165	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R166	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R167	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R168	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R169	NRSA63J-561X	MG RESISTOR	560Ω 1/16W J
R171	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R201	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R212	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J
R215	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R216	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R217	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R227	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R231	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J
R232	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J
R233	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R234	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J
R235	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R251	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R252	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R253	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R254	NRSA63J-181X	MG RESISTOR	180Ω 1/16W J
R255	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J
R256	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J
R257	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R261	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R262	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R263	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R264	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J
R282	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R283	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J
R285	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J
R286	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R287	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R288	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R292	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R293	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R295	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J
R296	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R297	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R298	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R301	NRSA63J-151X	MG RESISTOR	150Ω 1/16W J
R302	QRL029J-123	OMF RESISTOR	12kΩ 2W J
R303	QRZ0111-152	C RESISTOR	1.5kΩ 1/2W K
R304	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R305	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J
R306	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R311	NRSA63J-151X	MG RESISTOR	150Ω 1/16W J
R312	QRL029J-123	OMF RESISTOR	12kΩ 2W J
R313	QRZ0111-152	C RESISTOR	1.5kΩ 1/2W K
R314	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R315	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J
R316	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R321	NRSA63J-151X	MG RESISTOR	150Ω 1/16W J
R322	QRL029J-123	OMF RESISTOR	12kΩ 2W J
R323	QRZ0111-152	C RESISTOR	1.5kΩ 1/2W K
R324	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R325	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J
R326	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R331	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R334	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J
R335	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J
R354	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J
R356	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R359	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R360	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R364	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R365	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R366	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R401	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R402	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R403	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R405	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R406	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J
R407	QRE121J-681Y	C RESISTOR	680Ω 1/2W J
R408	QRE121J-681Y	C RESISTOR	680Ω 1/2W J
R409	QRX01GJ-1R0	MF RESISTOR	1Ω 1W J
R411	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J
R412	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J
R414	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R416	QRE121J-102Y	C RESISTOR	1kΩ 1/2W J
R501	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R502	NRSA63J-681X	MG RESISTOR	680Ω 1/16W J
R504	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J
R505	NRSA63J-154X	MG RESISTOR	150kΩ 1/16W J
R506	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R507	NRSA63J-561X	MG RESISTOR	560Ω 1/16W J
R508	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R509	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J
R510	QRE121J-103Y	C RESISTOR	10kΩ 1/2W J
R511	QRL039J-272	OMF RESISTOR	2.7kΩ 3W J
R512	QRL039J-332	OMF RESISTOR	3.3kΩ 3W J
R521	QRE121J-220Y	C RESISTOR	22Ω 1/2W J
R522	QRE121J-681Y	C RESISTOR	680Ω 1/2W J
R523	QRL039J-152	OMF RESISTOR	1.5kΩ 3W J
R524	QRE121J-334Y	C RESISTOR	330kΩ 1/2W J
R525	QRE121J-184Y	C RESISTOR	180kΩ 1/2W J
R526	QRK129J-150	UNF C RESISTOR	15Ω 1/2W J
R528	QRE121J-472Y	C RESISTOR	4.7kΩ 1/2W J
R529	QRK126J-4R7X	UNF C RESISTOR	4.7Ω 1/2W J
R530	QRX029J-1R5	MF RESISTOR	1.5Ω 2W J
R531	NRZ0032-7151X	CHIP MF RESISTOR	7.15kΩ
R533	NRZ0032-3241X	CHIP MF RESISTOR	3.24kΩ
R541	QRE121J-683Y	C RESISTOR	68kΩ 1/2W J
R621	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R622	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R624	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R625	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R627	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R628	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R630	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R631	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R632	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R638	QRT039J-1R2	MF RESISTOR	1.2Ω 3W J
R639	QRE121J-271Y	C RESISTOR	270Ω 1/2W J
R640	QRE121J-271Y	C RESISTOR	270Ω 1/2W J
R641	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R642	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R643	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R644	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R645	NRSA63J-105X	MG RESISTOR	1MΩ 1/16W J
R646	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R647	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R648	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R649	NRSA63J-683X	MG RESISTOR	68kΩ 1/16W J
R650	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R651	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R652	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R653	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J
R654	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R655	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R656	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R657	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R658	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R659	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R660	NRSA63J-105X	MG RESISTOR	1MΩ 1/16W J
R681	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R682	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R683	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R684	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R685	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R686	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R687	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R688	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R691	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J
R692	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J
R701	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R702	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R703	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R704	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R705	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R706	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R707	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R708	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R709	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R714	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J
R715	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J

⚠Ref No.	Part No.	Part Name	Description	Local
R718	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R720	QRJ149J-1R0	UNF C RESISTOR	1Ω 1/4W J	
R721	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R729	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R731	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R732	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R733	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R734	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R739	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
R740	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R751	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R752	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R753	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
R754	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
R755	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R756	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
R757	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R758	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R764	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R765	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R766	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R767	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R768	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R769	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R770	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R771	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J	
R772	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R773	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R774	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R775	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R776	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R777	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R778	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R801	NRSA63J-680X	MG RESISTOR	68Ω 1/16W J	
R802	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R803	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R804	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R805	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R821	NRSA63J-124X	MG RESISTOR	120kΩ 1/16W J	
R831	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R832	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R833	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R834	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R835	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R836	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R839	NRSA63J-225X	MG RESISTOR	2.2MΩ 1/16W J	
R851	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R852	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R853	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R854	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R855	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J	
R856	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R857	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R858	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R859	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R860	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R861	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R862	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R863	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R901	QRF074K-R47	UNF WW RESISTOR	0.47Ω 7W K	
R902	QRE121J-473Y	C RESISTOR	47kΩ 1/2W J	
R903	QRE121J-473Y	C RESISTOR	47kΩ 1/2W J	
R904	QRT029J-R22	MF RESISTOR	0.22Ω 2W J	
R905	QRT029J-R22	MF RESISTOR	0.22Ω 2W J	
R906	QRE121J-2R2Y	C RESISTOR	2.2Ω 1/2W J	
R907	QRE121J-472Y	C RESISTOR	4.7kΩ 1/2W J	
R908	QRK126J-681X	UNF C RESISTOR	680Ω 1/2W J	
R910	QRE121J-684Y	C RESISTOR	680kΩ 1/2W J	
R911	QRG01GJ-470	OMF RESISTOR	47Ω 1W J	
R922	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R923	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R924	QRX01GJ-1R0	MF RESISTOR	1Ω 1W J	
R925	QRX01GJ-1R0	MF RESISTOR	1Ω 1W J	
R926	QRT029J-1R2	MF RESISTOR	1.2Ω 2W J	
R927	QRT029J-1R2	MF RESISTOR	1.2Ω 2W J	
R928	QRE121J-272Y	C RESISTOR	2.7kΩ 1/2W J	
R929	QRE121J-223Y	C RESISTOR	22kΩ 1/2W J	
R930	QRE121J-473Y	C RESISTOR	47kΩ 1/2W J	
R932	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
R933	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
R934	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R935	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J	
R936	QRE121J-472Y	C RESISTOR	4.7kΩ 1/2W J	
R938	QRE121J-223Y	C RESISTOR	22kΩ 1/2W J	
R939	QRE121J-223Y	C RESISTOR	22kΩ 1/2W J	
R941	QRG029J-180	OMF RESISTOR	18Ω 2W J	
R942	QRE121J-5R6Y	C RESISTOR	5.6Ω 1/2W J	
R943	QRE121J-820Y	C RESISTOR	82Ω 1/2W J	
⚠R991	QRZ9041-275	C RESISTOR	2.7MΩ 1/2W K	
L101	QQLZ014-R39	COIL	0.39uH 100mA L	
L131	QQL29BJ-220Z	P COIL	0.65Ω 22uH J	
L161	QQL29BJ-220Z	P COIL	0.65Ω 22uH J	
L232	QQL29BJ-560Z	PEAKING COIL	56uH J	
L251	QQL29BJ-4R7Z	PEAKING COIL	4.7uH J	
L281	QQL29BJ-150Z	PEAKING COIL	15uH J	
L291	QQL29BJ-150Z	PEAKING COIL	15uH J	
L341	QQL29BJ-390Z	PEAKING COIL	39uH J	
L521	QQR1005-004	LIN COIL		
L522	QQLZ026-410	COIL	41uH ±7%	
L921	QQL26AK-470Z	CHOKE COIL	47uH K	
L922	QQL26AK-470Z	CHOKE COIL	47uH K	
T111	QQR0907-001	I F T		
T501	QQR1414-001	DRIVE TRANSF		
⚠T901	QQT0355-001	POWER TRANSF		
⚠T921	QQS0204-001	SW TRANSF		
CF001	QAX0349-001	C TRAP	47.25MHz	
CF131	QAX0639-001Z	C TRAP	4.500MHz	
CF161	QAX0642-001Z	C FILTER	4.500MHz	
CN00C	QGA2501F1-06	CONNECTOR	W-B (1-6)	
CN00S	QGA2501C5-04Z	CONNECTOR	W-B (1-4)	
CN00T	CHGC05-440	CONNECTOR ASSY		
CN00U	CHGC04-400	CONNECTOR ASSY		
CN0E1	CHGT0015-0B	CONNECTOR ASSY		
CN0HV	QGZ5004C1-06	CONNECTOR	(1-6)	
⚠CNDEG	QGZ5004C1-02	CONNECTOR	(1-2)	
⚠F901	QMF51N1-5R0-J5	FUSE	5A AC125V	
H002	LC30381-001A	HEAT SINK		
HS004	LC31696-001A	HEAT SINK		
HS009	LC31678-001A	HEAT SINK/AL-F/		
HS602	LC31696-002A	HEAT SINK		
J001	QNZ0454-001	AV JACK	S/V/L/R IN	
J002	QNN0348-001	PIN JACK	L/R OUT	
J003	QNN0349-002	PIN JACK	V/L/R IN	
J004	QNN0348-001	PIN JACK	L/R IN	
J005	CEMN065-001	PIN JACK	V IN	
J006	CEMN065-002	PIN JACK	L IN	
J007	CEMN072-003	PIN JACK	R IN	
J008	QNS0155-001	3.5 JACK	HEADPHONE	
K001	QQR0582-001Z	FERRITE BEADS		
K101	QQR0582-001Z	FERRITE BEADS		
K251	QQR0582-001Z	FERRITE BEADS		
K252	QQR0582-001Z	FERRITE BEADS		
K253	QQR0582-001Z	FERRITE BEADS		
K254	QQR0582-001Z	FERRITE BEADS		
K255	QQR0621-002Z	FERRITE BEADS		
K401	QQR0582-001Z	FERRITE BEADS		
K701	QQR0582-001Z	FERRITE BEADS		
K702	QQR0582-001Z	FERRITE BEADS		
K901	QQR0582-001Z	FERRITE BEADS		
K902	QQR0582-001Z	FERRITE BEADS		
K903	QQR0582-001Z	FERRITE BEADS		
K904	QQR0582-001Z	FERRITE BEADS		
K921	QQR0582-001Z	FERRITE BEADS		
K922	QQR0582-001Z	FERRITE BEADS		
K923	QQR0582-001Z	FERRITE BEADS		
LC687	QQR1459-001	EMI F. COIL		
LC688	QQR1459-001	EMI F. COIL		
LC801	QQR1459-001	EMI F. COIL		
⚠LF901	QQR0527-003	LINE FILTER		
RY901	QSK0085-001	RELAY		
S401	QSL4A13-C02	LEVER SWITCH	V.CENTER	
S751	QSW0847-001	TACT SWITCH	POWER	
S752	QSW0619-003Z	TACT SWITCH	VOL+	
S753	QSW0619-003Z	TACT SWITCH	VOL-	
S754	QSW0619-003Z	TACT SWITCH	CH+	
S755	QSW0619-003Z	TACT SWITCH	CH-	
S756	QSW0619-003Z	TACT SWITCH	MENU	
SF101	QAX0723-001	SAW FILTER		
⚠SK351	QNZ0536-001	CRT SOCKET		
TH901	QAD0129-3R0	POSISTOR	3Ω	
⚠TU001	QAU0353-001	TUNER		
⚠VA901	ERZV10V621CS	ZNR		
X701	QAX0767-001Z	CRYSTAL	8MHz	

PRINTED WIRING BOARD PARTS LIST [AV-N21F45/s]

MAIN P.W. BOARD ASS'Y (SFJ-1012A-M2)

⚠Ref No.	Part No.	Part Name	Description	Local
IC101	M52342FP-X	IC		
IC201	TM8812CSDNG5DB9	IC(MCU)		
IC251	TC90A49AP	IC		
IC421	AN5522	IC		
IC602	TFA9842J/N1	IC		
IC641	CXA2205Q-X	IC		
IC702	AT24C08-20F475	IC	(SERVICE)	
IC703	S-80840CNY-T	IC		
IC704	AN78L05-T	IC		
IC751	GP1UM281QK	IR DETECT UNIT	38kHz	
IC851	TA1218AN	IC		
IC901	STR-G5624A/F8	IC		
IC921	L7809CP	IC		
IC922	L7805CP	IC		
Q001	UN2212-X	TRANSISTOR		
Q101	2SC5083/L-P/-T	TRANSISTOR		
Q131	2SA1530A/QR/-X	TRANSISTOR		
Q161	2SC3928A/QR/-X	TRANSISTOR		
Q211	2SC3928A/QR/-X	TRANSISTOR		
Q232	2SC3928A/QR/-X	TRANSISTOR		
Q233	2SC3928A/QR/-X	TRANSISTOR		
Q251	2SC3928A/QR/-X	TRANSISTOR		
Q252	2SC3928A/QR/-X	TRANSISTOR		
Q281	2SA1530A/QR/-X	TRANSISTOR		
Q282	2SC3928A/QR/-X	TRANSISTOR		
Q283	2SA1530A/QR/-X	TRANSISTOR		
Q291	2SA1530A/QR/-X	TRANSISTOR		
Q292	2SC3928A/QR/-X	TRANSISTOR		
Q293	2SA1530A/QR/-X	TRANSISTOR		
Q301	2SC4075/DE/YA11	POW TRANSISTOR		
Q311	2SC4075/DE/YA11	POW TRANSISTOR		
Q321	2SC4075/DE/YA11	POW TRANSISTOR		
Q331	2SA1530A/QR/-X	TRANSISTOR		
Q352	2SD601A/QR/-X	TRANSISTOR		
Q501	2SC4212/Z1/	TRANSISTOR		
⚠Q521	2SD2634-YD	TRANSISTOR	H.OUT	
Q623	2SA1530A/QR/-X	TRANSISTOR		
Q625	2SC3928A/QR/-X	TRANSISTOR		
Q681	2SC3928A/QR/-X	TRANSISTOR		
Q682	2SC3928A/QR/-X	TRANSISTOR		
Q683	2SC3928A/QR/-X	TRANSISTOR		
Q684	2SC3928A/QR/-X	TRANSISTOR		
Q701	2SA1530A/QR/-X	TRANSISTOR		
Q751	UN2112-X	TRANSISTOR		
Q851	2SA1530A/QR/-X	TRANSISTOR		
Q921	2SD1383K/AB/-X	SI TRANSISTOR		
Q922	2SC2785/JH/-T	SI TRANSISTOR		
Q923	2SA1530A/QR/-X	TRANSISTOR		
Q924	2SA1208/ST/Z1-T	TRANSISTOR		
D331	1SS133-T2	DIODE		
D332	1SS133-T2	DIODE		
D333	1SS133-T2	DIODE		
D334	1SS133-T2	DIODE		
D352	MTZJ9.1C-T2	Z DIODE		
D353	1SS133-T2	DIODE		
D365	1SS133-T2	DIODE		
D366	1SS133-T2	DIODE		
D367	1SS133-T2	DIODE		
D368	MTZJ5.1B-T2	Z DIODE		
D369	MTZJ5.1B-T2	Z DIODE		
D370	MTZJ5.1B-T2	Z DIODE		
D401	1SR35-400A-T2	SI DIODE		
D402	MTZJ75-T2	Z DIODE		
D501	MTZJ3.3A-T2	Z DIODE		
D521	1SR35-400A-T2	SI DIODE		
D522	RH1S-T3	SI DIODE		
D523	1SR35-400A-T2	SI DIODE		
D524	RGP10J-04TS-T3	SI DIODE		
D525	MTZJ5.6A-T2	Z DIODE		
D526	MA4068N/Z1/-T2	Z DIODE		
D621	1SS133-T2	DIODE		
D622	1SS133-T2	DIODE		
D623	1SS133-T2	DIODE		
D681	MTZJ9.1C-T2	Z DIODE		
D682	MTZJ9.1C-T2	Z DIODE		
D683	MTZJ9.1C-T2	Z DIODE		
D684	MTZJ9.1C-T2	Z DIODE		
D685	MTZJ9.1C-T2	Z DIODE		
D686	MTZJ9.1C-T2	Z DIODE		
D687	MTZJ9.1C-T2	Z DIODE		
D688	MTZJ9.1C-T2	Z DIODE		
D705	1SS133-T2	DIODE		
D751	LG22440	LED	POWER/ON TIMER	
D801	MTZJ9.1C-T2	Z DIODE		
D802	MTZJ9.1C-T2	Z DIODE		
D803	MTZJ9.1C-T2	Z DIODE		
D804	MTZJ9.1C-T2	Z DIODE		
D807	MTZJ9.1C-T2	Z DIODE		
D831	MTZJ9.1C-T2	Z DIODE		
D832	MTZJ9.1C-T2	Z DIODE		
D833	MTZJ9.1C-T2	Z DIODE		
D834	MTZJ9.1C-T2	Z DIODE		
D901	GSIB460-S1	DIODE BRIDGE		
D902	RGP10J-04TS-T3	SI DIODE		
D903	RGP10J-04TS-T3	SI DIODE		
D904	RGP10J-04TS-T3	SI DIODE		
D905	SARS01-T2	SI DIODE		
D907	MA700A-T2	SB DIODE		
D908	MTZJ15C-T2	Z DIODE		
D921	RGP10J-04TS-T3	SI DIODE		
D922	RGP10J-04TS-T3	SI DIODE		
D923	RGP10J-04TS-T3	SI DIODE		
D924	RGP10J-04TS-T3	SI DIODE		
D925	1SS133-T2	DIODE		
D926	RU3AM-LFC4	SI DIODE		
D927	21DQ10N-T3	SB DIODE		
D928	RU3YX-LFC4	SI DIODE		
D929	MTZJ7.5A-T2	Z DIODE		
D930	1SS133-T2	DIODE		
D931	1SS133-T2	DIODE		
D932	MTZJ33B-T2	Z DIODE		
D933	1N4002G-T2	FR DIODE		
C001	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M	
C002	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C003	QETN1VM-476Z	E CAPACITOR	47uF 35V M	
C004	QETN0JM-477Z	E CAPACITOR	470uF 6.3V M	
C005	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C101	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C102	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C104	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C105	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C106	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C107	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C113	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C114	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C116	NCB31CK-224X	C CAPACITOR	0.22uF 16V K	
C119	NDC31HJ-681X	C CAPACITOR	680pF 50V J	
C120	QETN1HM-474Z	E CAPACITOR	0.47uF 50V M	
C124	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C131	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C161	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C162	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C163	NDC31HJ-470X	C CAPACITOR	47pF 50V J	
C164	NDC31HJ-470X	C CAPACITOR	47pF 50V J	
C165	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C166	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C167	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C202	QETN1HM-105Z	E CAPACITOR	1uF 50V M	
C203	NCB31HK-152X	C CAPACITOR	1500pF 50V K	
C211	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C221	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C222	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C223	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C233	NDC31HJ-680X	C CAPACITOR	68pF 50V J	
C237	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C241	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C243	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C244	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C247	QETN1HM-225Z	E CAPACITOR	2.2uF 50V M	
C252	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C253	NDC31HJ-470X	C CAPACITOR	47pF 50V J	
C254	NDC31HJ-181X	C CAPACITOR	180pF 50V J	
C261	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C262	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C263	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C264	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C265	QETN1HM-474Z	E CAPACITOR	0.47uF 50V M	
C266	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C267	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C268	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C269	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C270	QETN1EM-476Z	E CAPACITOR	47uF 25V M	

⚠Ref No.	Part No.	Part Name	Description	Local
C272	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C273	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C274	NDC31HJ-181X	C CAPACITOR	180pF 50V J	
C275	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C276	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C277	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C278	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C283	NDC31HJ-330X	C CAPACITOR	33pF 50V J	
C293	NDC31HJ-470X	C CAPACITOR	47pF 50V J	
C302	NDC31HJ-331X	C CAPACITOR	330pF 50V J	
C312	NDC31HJ-271X	C CAPACITOR	270pF 50V J	
C322	NDC31HJ-271X	C CAPACITOR	270pF 50V J	
C331	QETN1AM-227Z	E CAPACITOR	220uF 10V M	
C341	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C343	QCZ0121-102	C CAPACITOR	1000pF 3KV	
C352	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C354	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C361	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C362	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C401	QFVF1HJ-474Z	MF CAPACITOR	0.47uF 50V J	
C402	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C403	QENC1CM-336Z	BP E CAPACITOR	33uF 16V M	
C404	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C405	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C406	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C407	QETN1VM-107Z	E CAPACITOR	100uF 35V M	
C409	QFLC2AK-104Z	M CAPACITOR	0.1uF 100V K	
C410	QFLC2AK-104Z	M CAPACITOR	0.1uF 100V K	
C411	QETM1VM-228	E CAPACITOR	2200uF 35V M	
C412	QETN1HM-105Z	E CAPACITOR	1uF 50V M	
C501	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C502	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C503	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C504	QETN1HM-225Z	E CAPACITOR	2.2uF 50V M	
C505	NCB31AK-474X	C CAPACITOR	0.47uF 10V K	
C506	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C507	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C508	QCB32HK-151Z	C CAPACITOR	150pF 500V K	
C509	QCB32HK-331Z	C CAPACITOR	330pF 500V K	
C510	QETN2EM-225Z	E CAPACITOR	2.2uF 250V M	
C521	QCZ0325-821	C CAPACITOR	820pF 2kV K	
C522	QFZ0198-562	MPP CAPACITOR	5600pF 1.5KV	
C523	QFZ0197-404	MPP CAPACITOR	0.4uF 250V J	
C524	QCB32HK-561Z	C CAPACITOR	560pF 500V K	
C525	QEZ0203-107	E CAPACITOR	100uF 160V M	
C526	QFLC1HJ-823Z	M CAPACITOR	0.082uF 50V J	
C527	QETN2EM-106Z	E CAPACITOR	10uF 250V M	
C528	QETN1VM-108Z	E CAPACITOR	1000uF 35V M	
C529	QETN1VM-476Z	E CAPACITOR	47uF 35V M	
C530	QFLC2AJ-103Z	M CAPACITOR	0.01uF 100V J	
C621	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C622	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C627	NCF21CZ-105X	C CAPACITOR	1uF 16V Z	
C628	QETN1HM-226Z	E CAPACITOR	22uF 50V M	
C629	NCF21CZ-105X	C CAPACITOR	1uF 16V Z	
C630	QETN1EM-227Z	E CAPACITOR	220uF 25V M	
C632	QETN1EM-108Z	E CAPACITOR	1000uF 25V M	
C633	QETN1EM-227Z	E CAPACITOR	220uF 25V M	
C634	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C636	QETN1HM-225Z	E CAPACITOR	2.2uF 50V M	
C637	QETN1EM-108Z	E CAPACITOR	1000uF 25V M	
C638	QETN1EM-108Z	E CAPACITOR	1000uF 25V M	
C641	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C642	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C643	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C644	NCB31HK-562X	C CAPACITOR	5600pF 50V K	
C645	NCB31HK-123X	C CAPACITOR	0.012uF 50V K	
C646	QETN1HM-105Z	E CAPACITOR	1uF 50V M	
C647	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M	
C648	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C649	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M	
C650	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C651	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C652	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C653	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M	
C654	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C655	NCB31HK-272X	C CAPACITOR	2700pF 50V K	
C656	NCB31HK-473X	C CAPACITOR	0.047uF 50V K	
C657	QETN1HM-335Z	E CAPACITOR	3.3uF 50V M	
C658	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C659	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C660	QETN1HM-105Z	E CAPACITOR	1uF 50V M	
C661	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C662	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C663	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C664	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C665	QETN1CM-227Z	E CAPACITOR	220uF 16V M	
C666	NCB31HK-223X	C CAPACITOR	0.022uF 50V K	
C667	NCB31HK-472X	C CAPACITOR	4700pF 50V K	
C668	QENC1HM-475Z	BP E CAPACITOR	4.7uF 50V M	
C669	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C670	NCB31HK-472X	C CAPACITOR	4700pF 50V K	
C671	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C672	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C681	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C682	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C683	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C684	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C685	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C686	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C687	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C688	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C689	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C701	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C702	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C703	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C704	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C705	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C708	NDC31HJ-220X	C CAPACITOR	22pF 50V J	
C709	NDC31HJ-220X	C CAPACITOR	22pF 50V J	
C711	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C712	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C713	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C751	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C801	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C802	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C803	QETN1HM-105Z	E CAPACITOR	1uF 50V M	
C804	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C807	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C815	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C831	NCB31AK-334X	C CAPACITOR	0.33uF 10V K	
C832	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C833	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C834	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C851	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C852	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C853	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C854	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C855	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C856	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C857	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C858	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C859	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C860	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C861	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C862	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
⚠C901	QFZ9072-104	MM CAPACITOR	0.1uF AC250V K	
⚠C902	QFZ9072-104	MM CAPACITOR	0.1uF AC250V K	
C903	QEZ0376-477	E CAPACITOR	470uF 200V M	
⚠C904	QCZ9054-102	C CAPACITOR	1000pF AC250V Z	
⚠C905	QCZ9054-102	C CAPACITOR	1000pF AC250V Z	
C907	QETN1HM-476Z	E CAPACITOR	47uF 50V M	
C908	QCZ0340-222	C CAPACITOR	2200pF 2kV K	
C909	NCB31HK-122X	C CAPACITOR	1200pF 50V K	
C910	NDC31HJ-471X	C CAPACITOR	470pF 50V J	
C911	QFP32GJ-103Z	PP CAPACITOR	0.01uF 400V J	
C921	QETN1EM-477Z	E CAPACITOR	470uF 25V M	
C923	QEZ0203-107	E CAPACITOR	100uF 160V M	
C924	QETN2CM-476Z	E CAPACITOR	47uF 160V M	
C925	QETN1CM-108Z	E CAPACITOR	1000uF 16V M	
C926	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C927	QETN1EM-477Z	E CAPACITOR	470uF 25V M	
C929	QCZ0340-102	C CAPACITOR	1000pF 2kV K	
C930	QCB32HK-102Z	C CAPACITOR	1000pF 500V K	
C931	QCB32HK-102Z	C CAPACITOR	1000pF 500V K	
C932	QETN0JM-107Z	E CAPACITOR	100uF 6.3V M	
C933	QETN1VM-476Z	E CAPACITOR	47uF 35V M	
C935	QETN1CM-476Z	E CAPACITOR	47uF 16V M	
C940	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C941	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C942	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C943	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C944	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C945	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
⚠C991	QCZ9073-332	C CAPACITOR	3300pF	
R003	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R004	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R005	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R006	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R008	NRSA63J-820X	MG RESISTOR	82Ω 1/16W J	
R101	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R102	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	
R103	QRE121J-101Y	C RESISTOR	100Ω 1/2W J	

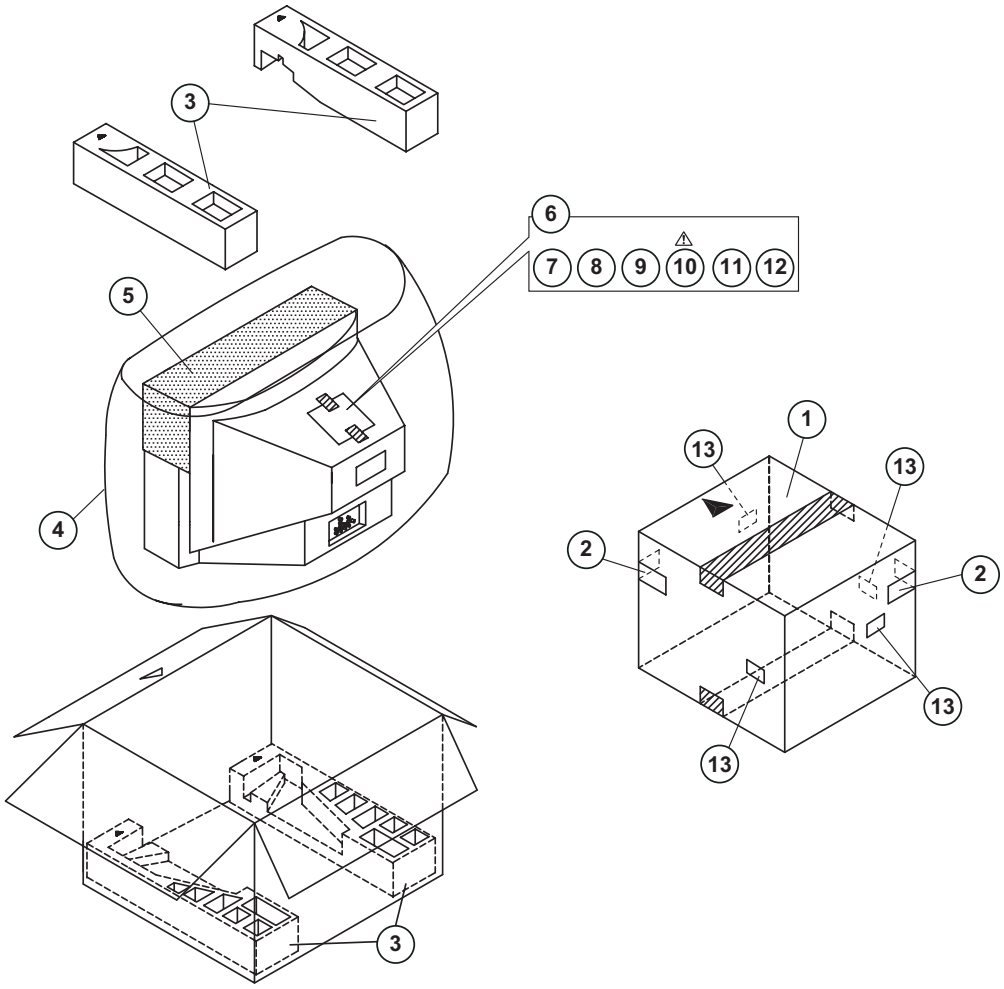
⚠Ref No.	Part No.	Part Name	Description	Local
R104	NRSA63J-180X	MG RESISTOR	18Ω 1/16W J	
R105	NRSA63J-270X	MG RESISTOR	27Ω 1/16W J	
R111	NRSA63J-394X	MG RESISTOR	390kΩ 1/16W J	
R112	NRSA63J-334X	MG RESISTOR	330kΩ 1/16W J	
R113	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R115	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R116	NRSA63J-680X	MG RESISTOR	68Ω 1/16W J	
R117	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R121	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R122	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R131	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R132	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J	
R133	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R134	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R135	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
R161	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R163	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R164	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R165	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R166	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R167	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R168	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R169	NRSA63J-561X	MG RESISTOR	560Ω 1/16W J	
R171	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J	
R201	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R212	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
R215	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R216	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R217	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R227	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R231	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	
R232	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J	
R233	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R234	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
R235	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R251	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R252	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R253	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R254	NRSA63J-181X	MG RESISTOR	180Ω 1/16W J	
R255	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
R256	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
R257	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R261	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R262	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R263	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R264	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R282	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R283	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	
R285	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J	
R286	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R287	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R288	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R292	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R293	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R295	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J	
R296	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R297	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R298	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R301	NRSA63J-151X	MG RESISTOR	150Ω 1/16W J	
R302	QRL029J-123	OMF RESISTOR	12kΩ 2W J	
R303	QRZ0111-152	C RESISTOR	1.5kΩ 1/2W K	
R304	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R305	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J	
R306	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R311	NRSA63J-151X	MG RESISTOR	150Ω 1/16W J	
R312	QRL029J-123	OMF RESISTOR	12kΩ 2W J	
R313	QRZ0111-152	C RESISTOR	1.5kΩ 1/2W K	
R314	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R315	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J	
R316	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R321	NRSA63J-151X	MG RESISTOR	150Ω 1/16W J	
R322	QRL029J-123	OMF RESISTOR	12kΩ 2W J	
R323	QRZ0111-152	C RESISTOR	1.5kΩ 1/2W K	
R324	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R325	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J	
R326	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R331	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R334	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J	
R335	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
R354	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J	
R356	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
R359	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R360	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R364	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R365	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R366	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R401	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R402	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R403	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R405	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R406	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J	
R407	QRE121J-681Y	C RESISTOR	680Ω 1/2W J	
R408	QRE121J-681Y	C RESISTOR	680Ω 1/2W J	
R409	QRX01GJ-1R0	MF RESISTOR	1Ω 1W J	
R411	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J	
R412	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J	
R414	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
R416	QRE121J-102Y	C RESISTOR	1kΩ 1/2W J	
R501	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R502	NRSA63J-681X	MG RESISTOR	680Ω 1/16W J	
R504	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J	
R505	NRSA63J-154X	MG RESISTOR	150kΩ 1/16W J	
R506	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R507	NRSA63J-561X	MG RESISTOR	560Ω 1/16W J	
R508	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R509	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J	
R510	QRE121J-103Y	C RESISTOR	10kΩ 1/2W J	
R511	QRL039J-272	OMF RESISTOR	2.7kΩ 3W J	
R512	QRL039J-332	OMF RESISTOR	3.3kΩ 3W J	
R521	QRE121J-220Y	C RESISTOR	22Ω 1/2W J	
R522	QRE121J-681Y	C RESISTOR	680Ω 1/2W J	
R523	QRL039J-152	OMF RESISTOR	1.5kΩ 3W J	
R524	QRE121J-334Y	C RESISTOR	330kΩ 1/2W J	
R525	QRE121J-184Y	C RESISTOR	180kΩ 1/2W J	
R526	QRK129J-150	UNF C RESISTOR	15Ω 1/2W J	
R528	QRE121J-472Y	C RESISTOR	4.7kΩ 1/2W J	
R529	QRK126J-4R7X	UNF C RESISTOR	4.7Ω 1/2W J	
R530	QRX029J-1R5	MF RESISTOR	1.5Ω 2W J	
R531	NRZ0032-7151X	CHIP MF RESISTOR	7.15kΩ	
R533	NRZ0032-3241X	CHIP MF RESISTOR	3.24kΩ	
R541	QRE121J-683Y	C RESISTOR	68kΩ 1/2W J	
R621	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R622	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J	
R624	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R625	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J	
R627	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R628	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R630	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R631	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R632	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R638	QRT039J-1R2	MF RESISTOR	1.2Ω 3W J	
R639	QRE121J-271Y	C RESISTOR	270Ω 1/2W J	
R640	QRE121J-271Y	C RESISTOR	270Ω 1/2W J	
R641	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R642	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R643	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R644	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R645	NRSA63J-105X	MG RESISTOR	1MΩ 1/16W J	
R646	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R647	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R648	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
R649	NRSA63J-683X	MG RESISTOR	68kΩ 1/16W J	
R650	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R651	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J	
R652	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R653	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J	
R654	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R655	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R656	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R657	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R658	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R659	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R660	NRSA63J-105X	MG RESISTOR	1MΩ 1/16W J	
R681	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R682	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R683	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R684	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R685	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R686	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R687	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R688	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R691	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J	
R692	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J	
R701	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R702	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R703	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R704	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R705	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R706	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R707	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R708	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R709	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R714	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J	
R715	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	

⚠Ref No.	Part No.	Part Name	Description	Local
R718	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R720	QRJ149J-1R0	UNF C RESISTOR	1Ω 1/4W J	
R721	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R729	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R731	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R732	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R733	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R734	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R739	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
R740	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R751	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R752	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R753	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
R754	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
R755	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R756	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
R757	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R758	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R764	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R765	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R766	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R767	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R768	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R769	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R770	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R771	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J	
R772	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R773	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R774	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R775	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R776	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R777	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R778	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R801	NRSA63J-680X	MG RESISTOR	68Ω 1/16W J	
R802	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R803	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R804	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R805	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R821	NRSA63J-124X	MG RESISTOR	120kΩ 1/16W J	
R831	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R832	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R833	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R834	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R835	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R836	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R839	NRSA63J-225X	MG RESISTOR	2.2MΩ 1/16W J	
R851	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R852	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R853	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R854	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R855	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J	
R856	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R857	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R858	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R859	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R860	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R861	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R862	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R863	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R901	QRF074K-R47	UNF WW RESISTOR	0.47Ω 7W K	
R902	QRE121J-473Y	C RESISTOR	47kΩ 1/2W J	
R903	QRE121J-473Y	C RESISTOR	47kΩ 1/2W J	
R904	QRT029J-R22	MF RESISTOR	0.22Ω 2W J	
R905	QRT029J-R22	MF RESISTOR	0.22Ω 2W J	
R906	QRE121J-2R2Y	C RESISTOR	2.2Ω 1/2W J	
R907	QRE121J-472Y	C RESISTOR	4.7kΩ 1/2W J	
R908	QRK126J-681X	UNF C RESISTOR	680Ω 1/2W J	
R910	QRE121J-684Y	C RESISTOR	680kΩ 1/2W J	
R911	QRG01GJ-470	OMF RESISTOR	47Ω 1W J	
R922	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R923	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R924	QRX01GJ-1R0	MF RESISTOR	1Ω 1W J	
R925	QRX01GJ-1R0	MF RESISTOR	1Ω 1W J	
R926	QRT029J-1R2	MF RESISTOR	1.2Ω 2W J	
R927	QRT029J-1R2	MF RESISTOR	1.2Ω 2W J	
R928	QRE121J-272Y	C RESISTOR	2.7kΩ 1/2W J	
R929	QRE121J-223Y	C RESISTOR	22kΩ 1/2W J	
R930	QRE121J-473Y	C RESISTOR	47kΩ 1/2W J	
R932	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
R933	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
R934	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R935	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J	
R936	QRE121J-472Y	C RESISTOR	4.7kΩ 1/2W J	
R938	QRE121J-223Y	C RESISTOR	22kΩ 1/2W J	
R939	QRE121J-223Y	C RESISTOR	22kΩ 1/2W J	
R941	QRG029J-180	OMF RESISTOR	18Ω 2W J	
R942	QRE121J-5R6Y	C RESISTOR	5.6Ω 1/2W J	
R943	QRE121J-820Y	C RESISTOR	82Ω 1/2W J	
⚠R991	QRZ9041-275	C RESISTOR	2.7MΩ 1/2W K	
L101	QQLZ014-R39	COIL	0.39uH 100mA L	
L131	QQL29BJ-220Z	P COIL	0.65Ω 22uH J	
L161	QQL29BJ-220Z	P COIL	0.65Ω 22uH J	
L232	QQL29BJ-560Z	PEAKING COIL	56uH J	
L251	QQL29BJ-4R7Z	PEAKING COIL	4.7uH J	
L281	QQL29BJ-150Z	PEAKING COIL	15uH J	
L291	QQL29BJ-150Z	PEAKING COIL	15uH J	
L341	QQL29BJ-390Z	PEAKING COIL	39uH J	
L521	QQR1005-004	LIN COIL		
L522	QQLZ026-410	COIL	41uH ±7%	
L921	QQL26AK-470Z	CHOKE COIL	47uH K	
L922	QQL26AK-470Z	CHOKE COIL	47uH K	
T111	QQR0907-001	I F T		
T501	QQR1414-001	DRIVE TRANSF		
⚠T901	QQT0355-001	POWER TRANSF		
⚠T921	QQS0204-001	SW TRANSF		
CF001	QAX0349-001	C TRAP	47.25MHz	
CF131	QAX0639-001Z	C TRAP	4.500MHz	
CF161	QAX0642-001Z	C FILTER	4.500MHz	
CN00C	QGA2501F1-06	CONNECTOR	W-B (1-6)	
CN00S	QGA2501C5-04Z	CONNECTOR	W-B (1-4)	
CN00T	CHGC05-440	CONNECTOR ASSY		
CN00U	CHGC04-400	CONNECTOR ASSY		
CN0E1	CHGT0015-0B	CONNECTOR ASSY		
CN0HV	QGZ5004C1-06	CONNECTOR	(1-6)	
⚠CNDEG	QGZ5004C1-02	CONNECTOR	(1-2)	
⚠F901	QMF51N1-5R0-J5	FUSE	5A AC125V	
H002	LC30381-001A	HEAT SINK		
HS004	LC31696-001A	HEAT SINK		
HS009	LC31678-001A	HEAT SINK/AL-F/		
HS602	LC31696-002A	HEAT SINK		
J001	QNZ0454-001	AV JACK	S/V/L/R IN	
J002	QNN0348-001	PIN JACK	L/R OUT	
J003	QNN0349-002	PIN JACK	V/L/R IN	
J004	QNN0348-001	PIN JACK	L/R IN	
J005	CEMN065-001	PIN JACK	V IN	
J006	CEMN065-002	PIN JACK	L IN	
J007	CEMN072-003	PIN JACK	R IN	
J008	QNS0155-001	3.5 JACK	HEADPHONE	
K001	QQR0582-001Z	FERRITE BEADS		
K101	QQR0582-001Z	FERRITE BEADS		
K251	QQR0582-001Z	FERRITE BEADS		
K252	QQR0582-001Z	FERRITE BEADS		
K253	QQR0582-001Z	FERRITE BEADS		
K254	QQR0582-001Z	FERRITE BEADS		
K255	QQR0621-002Z	FERRITE BEADS		
K401	QQR0582-001Z	FERRITE BEADS		
K701	QQR0582-001Z	FERRITE BEADS		
K702	QQR0582-001Z	FERRITE BEADS		
K901	QQR0582-001Z	FERRITE BEADS		
K902	QQR0582-001Z	FERRITE BEADS		
K903	QQR0582-001Z	FERRITE BEADS		
K904	QQR0582-001Z	FERRITE BEADS		
K921	QQR0582-001Z	FERRITE BEADS		
K922	QQR0582-001Z	FERRITE BEADS		
K923	QQR0582-001Z	FERRITE BEADS		
LC687	QQR1459-001	EMI F. COIL		
LC688	QQR1459-001	EMI F. COIL		
LC801	QQR1459-001	EMI F. COIL		
⚠LF901	QQR0527-003	LINE FILTER		
RY901	QSK0085-001	RELAY		
S401	QSL4A13-C02	LEVER SWITCH	V.CENTER	
S751	QSW0847-001	TACT SWITCH	POWER	
S752	QSW0619-003Z	TACT SWITCH	VOL+	
S753	QSW0619-003Z	TACT SWITCH	VOL-	
S754	QSW0619-003Z	TACT SWITCH	CH+	
S755	QSW0619-003Z	TACT SWITCH	CH-	
S756	QSW0619-003Z	TACT SWITCH	MENU	
SF101	QAX0723-001	SAW FILTER		
⚠SK351	QNZ0536-001	CRT SOCKET		
TH901	QAD0129-3R0	POSISTOR	3Ω	
⚠TU001	QAU0353-001	TUNER		
⚠VA901	ERZV10V621CS	ZNR		
X701	QAX0767-001Z	CRYSTAL	8MHz	

REMOTE CONTROL UNIT PARTS LIST (RM-C1258G-1H)

⚠	Ref.No.	Part No.	Part Name	Description	Local
		UR77EC0603B	BATTERY COVER		

PACKING



PACKING PARTS LIST

⚠	Ref.No.	Part No.	Part Name	Description	Local
	1	GQ10009-030A-A	PACKING CASE		
	2	CM36616-001-A	CORNER LABEL	2pcs in 1set	
	3	GQ10062-001A-A	CUSHION ASSY	4pcs in 1set	
	4	CP30056-008-A	POLY BAG		
	5	CP30055-001-A	TOP COVER		
	6	QPA02503505	POLY BAG	25cm x 35cm	
	7	RM-C1258G-1H	REMOCON		
	8	----------	BATTERY	R6P/AA(x2)	
	9	BT-52006-2Q	WARRANTY CARD		AV-20F475/S
⚠	10	LCT1532-001A-A	INST BOOK	English/French	AV-20F475/S
⚠	10	LCT1608-001A-A	INST BOOK	Spanish	AV-N21F45/S
	11	BT-51034-1Q	REGIST. CARD		AV-20F475/S
	12	CM36042-00A-H	ROD ANTENNA		AV-N21F45/S
	13	GQ40044-004B-A	INCH SIZE LABEL	(x4)	AV-N21F45/S

JVC

SCHEMATIC DIAGRAMS

COLOR TELEVISION

AV-20F475/S,
AV-N21F45/S

CD-ROM No.SML200404

BASIC CHASSIS
FJ2

I'Art™

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No.YA052
2004/4

AV-20F475/S, AV-N21F45/S
STANDARD CIRCUIT DIAGRAM

■ NOTE ON USING CIRCUIT DIAGRAMS

1.SAFETY

The components identified by the ⚠ symbol and shading are critical for safety. For continued safety replace safety ciritical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1)Input signal	: Colour bar signal	
(2)Setting positions of each knob/button and variable resistor	: Original setting position when shipped	
(3)Internal resistance of tester	: DC 20kΩ/V	
(4)Oscilloscope sweeping time	: H	⇒ 20μs / div
	: V	⇒ 5ms / div
	: Othters	⇒ Sweeping time is specified
(5)Voltage values	: All DC voltage values	

∗ Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL [EXAMPLE]

● In the PW board : R1209 → R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

● Resistance value

No unit	: [Ω]
K	: [kΩ]
M	: [MΩ]

● Rated allowable power

No indication	: 1/16 [W]
Others	: As specified

● Type

No indication	: Carbon resistor
OMR	: Oxide metal film resistor
MFR	: Metal film resistor
MPR	: Metal plate resistor
UNFR	: Uninflammable resistor
FR	: Fusible resistor

∗ Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

● Capacitance value

1 or higher	: [pF]
less than 1	: [μF]

● Withstand voltage

No indication	: DC50[V]
Others	: DC withstand voltage [V]
AC indicated	: AC withstand voltage [V]

∗ Electrolytic Capacitors

47/50[Example]: Capacitance value [μF]/withstand voltage[V]

● Type

No indication	: Ceramic capacitor
MM	: Metalized mylar capacitor
PP	: Polypropylene capacitor
MPP	: Metalized polypropylene capacitor
MF	: Metalized film capacitor
TF	: Thin film capacitor
BP	: Bipolar electrolytic capacitor
TAN	: Tantalum capacitor

(3)Coils

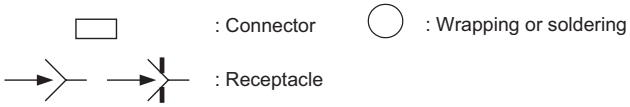
No unit	: [μH]
Others	: As specified

(4)Power Supply

∗ Respective voltage values are indicated

(5)Test point

(6)Connecting method



(7)Ground symbol

⊥ : LIVE side ground

⏚ : ISOLATED(NEUTRAL) side ground

⏚ : EARTH ground

▽ : DIGITAL ground

5.NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED(NEUTRAL) : (⏚) side GND. Therefore, care must be taken for the following points.

(1)Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. if the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.

(2)Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.

◆ **Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.**

NOTE

◆ **Due improvement in performance, some part numbers show in the circuit diagram may not agree with those indicated in the part list.**
When ordering parts, please use the numbers that appear in the Parts List.

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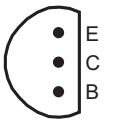
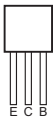
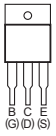
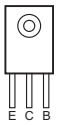
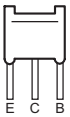
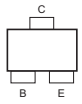
USING P.W. BOARD

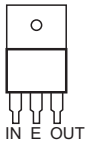
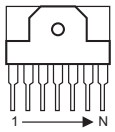
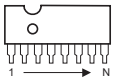
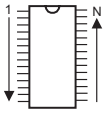
PWB ASS'Y name	AV-20FA475/S	AV-N21F45/S
MAIN P.W. BOARD	SFJ-1011A-M2	SFJ-1012A-M2

SEMICONDUCTOR SHAPES

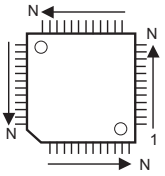
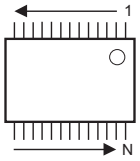
TRANSISTOR

BOTTOM VIEW	FRONT VIEW				TOP VIEW
					CHIP TR 

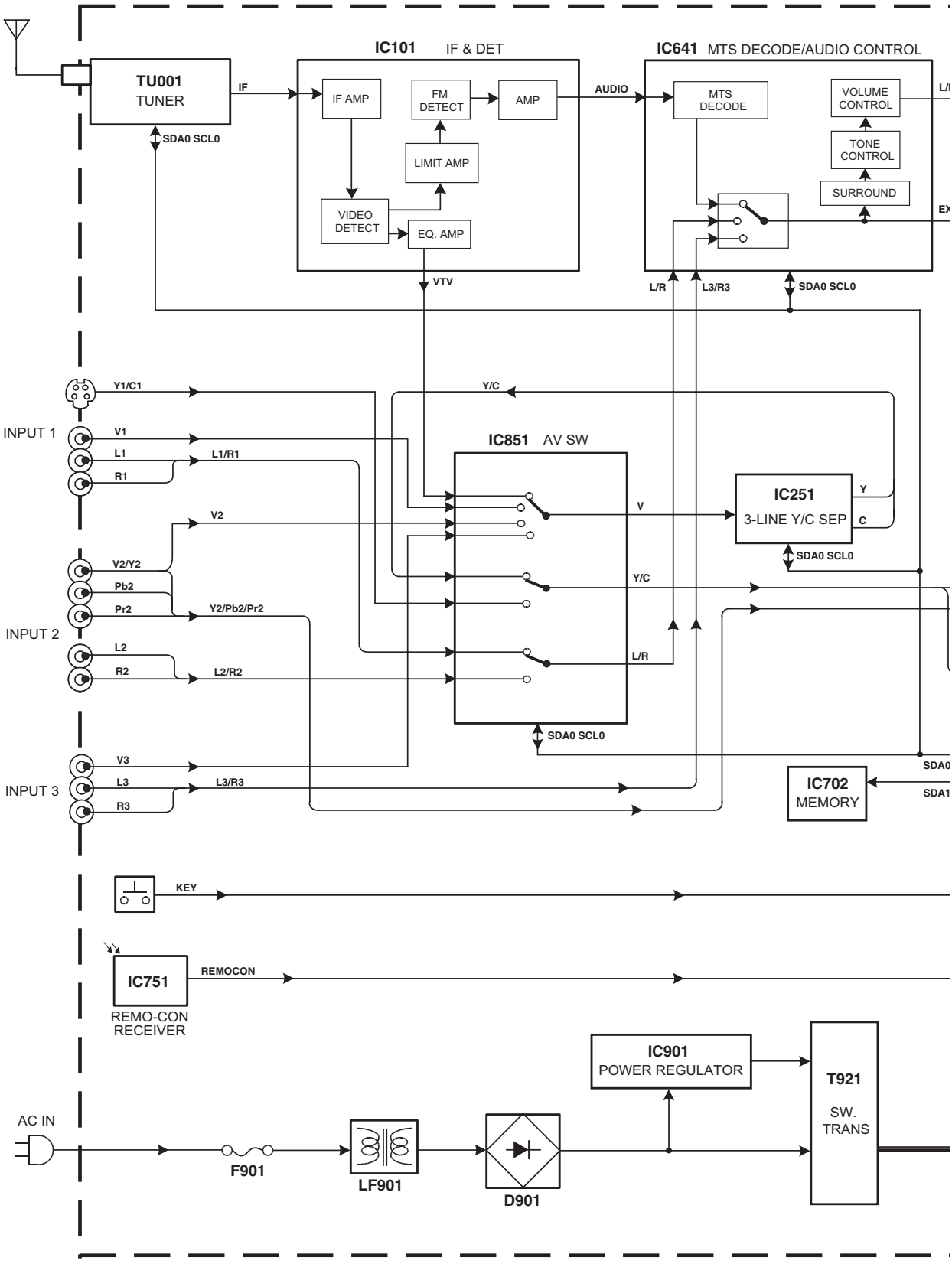
IC

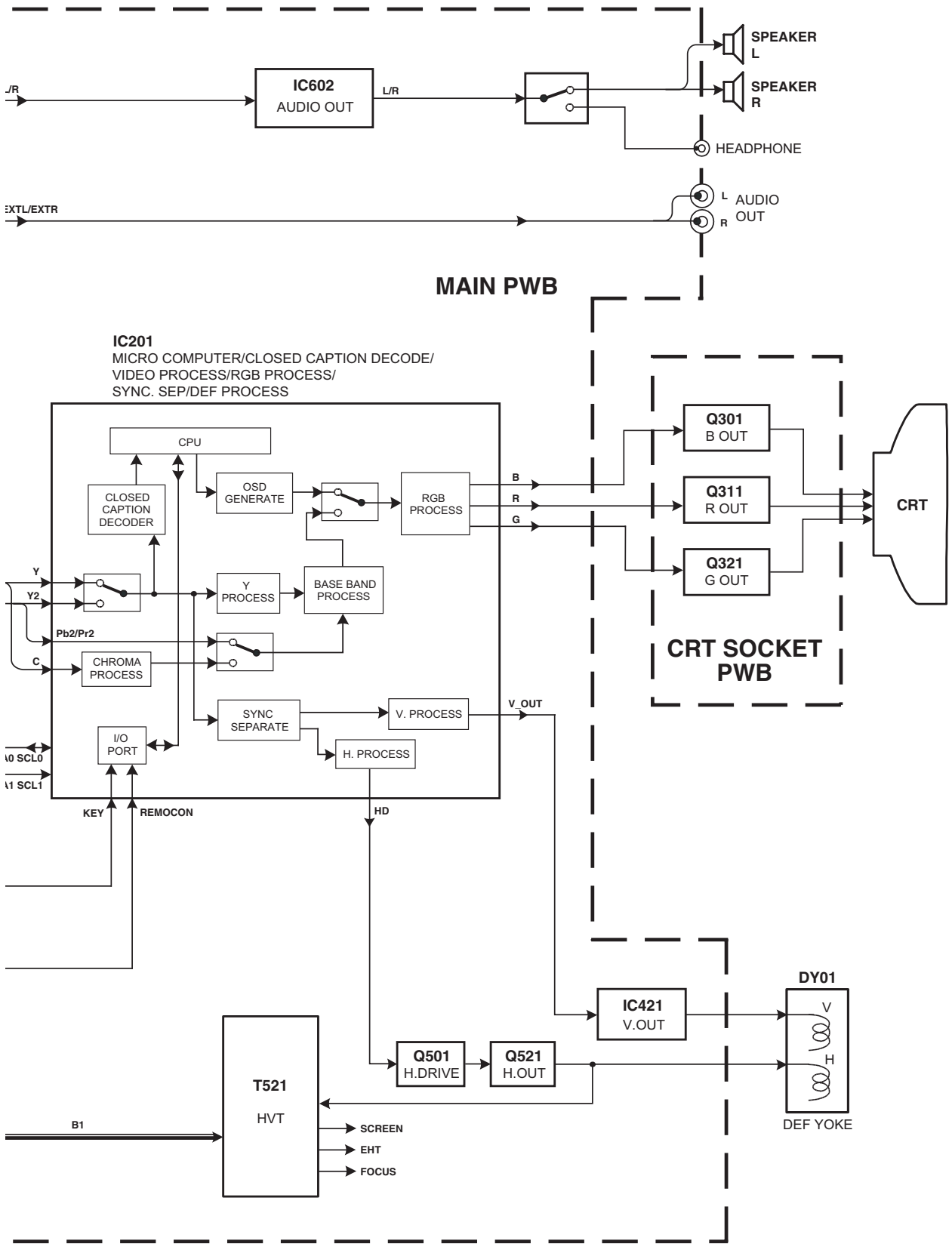
BOTTOM VIEW	FRONT VIEW			TOP VIEW
				

CHIP IC

TOP VIEW		
		

BLOCK DIAGRAM




SPEAKER L
SPEAKER R
IC602
AUDIO OUT
L/R
HEADPHONE
L
R
AUDIO OUT
MAIN PWB
IC201
MICRO COMPUTER/CLOSED CAPTION DECODE/
VIDEO PROCESS/RGB PROCESS/
SYNC. SEP/DEF PROCESS
CPU
CLOSED CAPTION DECODER
OSD GENERATE
RGB PROCESS
B
R
G
Y
Y2
Y PROCESS
BASE BAND PROCESS
Pb2/Pr2
C
CHROMA PROCESS
SYNC SEPARATE
V. PROCESS
V_OUT
H. PROCESS
I/O PORT
KEY
REMOCON
HD
Q301
B OUT
Q311
R OUT
Q321
G OUT
CRT
CRT SOCKET PWB
IC421
V.OUT
DY01
V
H
DEF YOKE
Q501
H.DRIVE
Q521
H.OUT
T521
HVT
B1
SCREEN
EHT
FOCUS

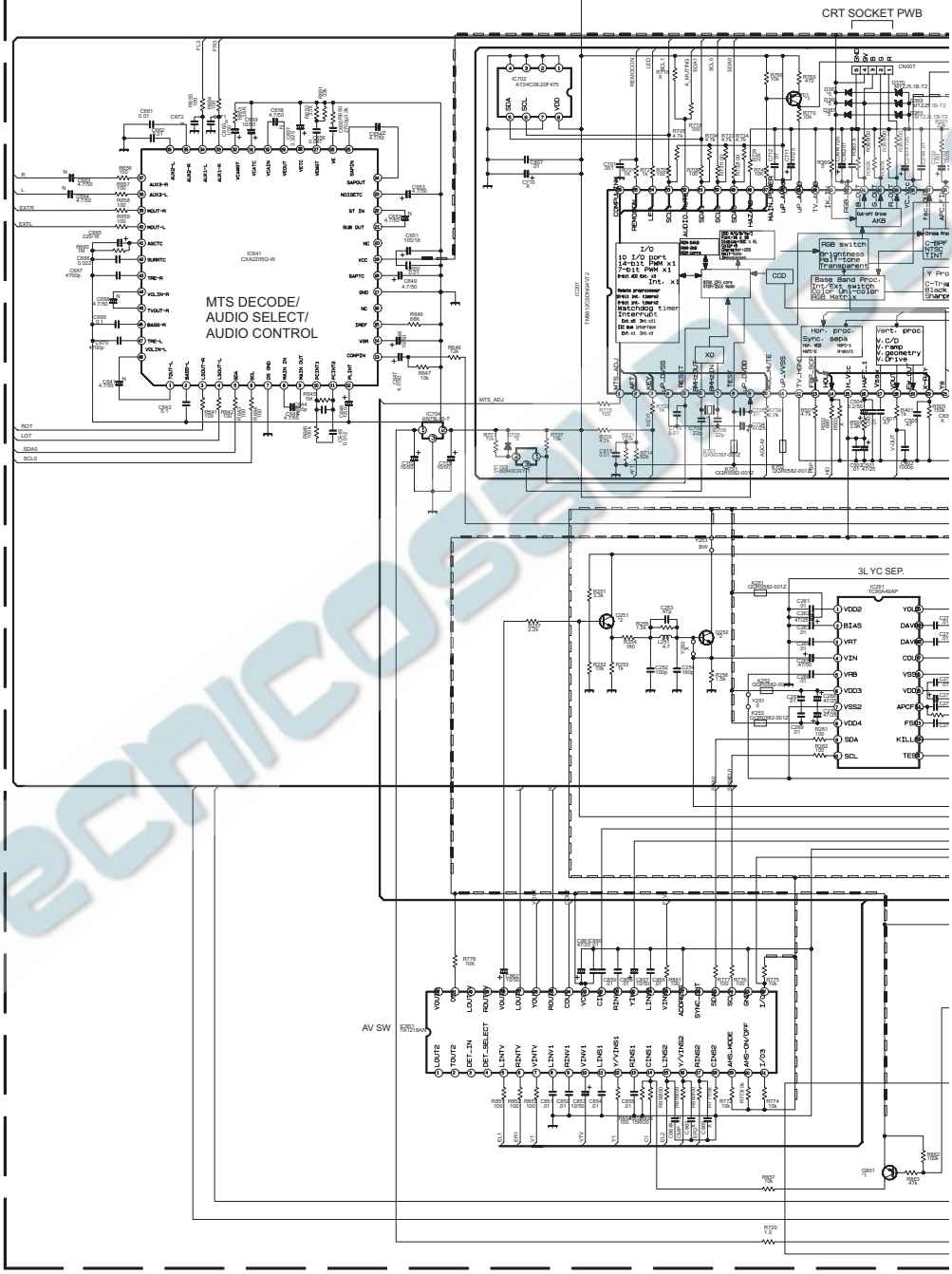
CIRCUIT DIAGRAMS *MAIN PWB CIRCUIT DIAGRAM (1/2)*

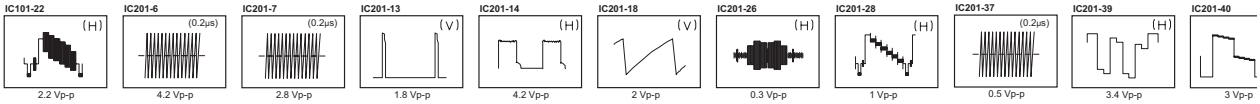
MODE PIN NO.	DC (V)
IC101	
1	2
2	3.6
3	2.3
4	1.4
5	1.4
6	0
7	0
8	0
9	0
10	2.7
11	2.4
12	5
13	2.2
14	3.5
15	2.2
16	8.8
17	8.7
18	4.1
19	0
20	5
21	5
22	2.5
23	3.5
24	1.8
IC201	
1	0.8
2	1.8
3	5
4	0
5	5
6	2.2
7	2
8	0
9	5
10	0
11	0
12	0
13	0.9
14	1.8
15	8.8
16	6.3
17	3.6
18	4.5
19	4.4
20	0
21	0
22	2.2
23	2.4
24	2.2
25	3.5
26	2.2
27	0.7
28	2.6
29	0
30	2.3
31	5.7
32	0
33	2.2
34	3.7
35	1.8
36	2.5
37	3
38	5
39	2.3
40	2.2
41	2.3
42	8.8
43	0
44	0
45	0
46	5
47	0
48	0
49	4.7
50	4.6
51	5
52	0
53	5
54	0
55	4.9
56	0
IC251	
1	4.9
2	1.4
3	3.1
4	2.5
5	1.8
6	5
7	0
8	4.9
9	4.8
10	4.6
11	0
12	0
13	2.5
14	2
15	5
16	0
17	2.5
18	3.1
19	1.8
20	2.5
IC602	
1	3.1
2	8.7
3	0
4	3.1
5	0
6	10.1
7	16.8
8	8.6
9	17.3

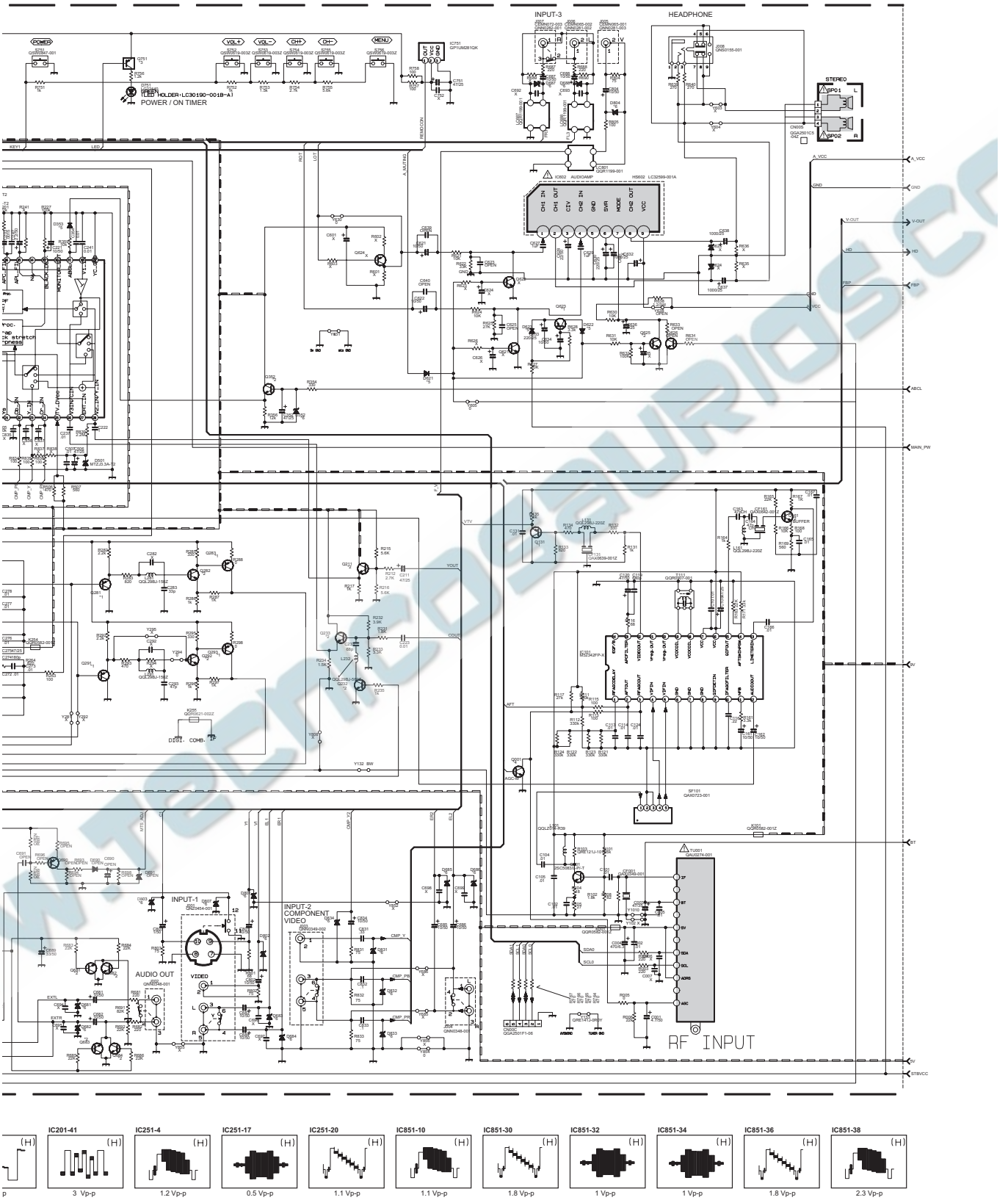
MODE PIN NO.	DC (V)
IC641	
1	4
2	4.1
3	4
4	4
5	4.7
6	4.7
7	0
8	4
9	3.8
10	4
11	3.9
12	3.3
13	4
14	1.2
15	1.2
16	0
17	0
18	3
19	8.8
20	0
21	4
22	4
23	4.2
24	0
25	4
26	4
27	4
28	2.1
29	4
30	4
31	2
32	4
33	4
34	4
35	4
36	4
37	4
38	4
39	4
40	4
41	1.2
42	4
43	4
44	4
45	4
46	4.1
47	4.1
48	4
IC702	
1	0
2	0
3	0
4	0
5	0
6	5
7	0
8	5
IC703	
1	5
2	5
3	0
IC704	
1	9
2	0
3	5
IC751	
1	4.9
2	5
3	0
IC851	
1	3.9
2	3.9
3	6.4
4	3.6
5	5.1
6	5.1
7	5.1
8	5.1
9	5.1
10	5.1
11	5.1
12	5
13	5.1
14	1.7
15	5.1
16	5.1
17	5.1
18	1.7
19	0
20	0
21	0
22	1
23	0
24	4.6
25	4.8
26	0.9
27	0
28	5
29	5.1
30	5.1
31	5.1
32	5
33	8.8
34	3.6
35	3.9
36	3.9
37	3.9
38	4.3
39	3.9
40	3.9
41	0.1
42	4.3

MODE PIN NO.	DC (V)
TU001	
AGC	0
-	NC
ADRS	4.9
SCL	4.6
SDA	4.6
-	NC
5V	4.9
-	NC
BT	32.9
-	NC
IF	0
Q001	
E	0
C	2.5
B	0
Q101	
E	1
C	8.7
B	1.8
Q131	
E	1.8
C	0
B	1.2
Q161	
E	2
C	5.7
B	2.7
Q211	
E	3.7
C	8.7
B	4.4
Q232	
E	0
C	0
B	0.6
Q233	
E	3.3
C	8.8
B	4
Q251	
E	3
C	4.9
B	3.7
Q252	
E	2.4
C	5
B	3
Q281	
E	3.1
C	0
B	2.5
Q282	
E	2.5
C	4.3
B	3.1
Q283	
E	5
C	3.1
B	4.2
Q291	
E	3.1
C	0
B	2.5
Q292	
E	2.4
C	4.4
B	3.1
Q293	
E	5
C	3.1
B	4.4
Q352	
E	5.1
C	8.7
B	5.8
Q623	
E	9
C	-1.1
B	9.1
Q625	
E	0
C	16.8
B	0
Q681	
E	1.5
C	0
B	0
Q682	
E	0
C	1.5
B	0
Q683	
E	1.6
C	0
B	0
Q684	
E	0
C	1.7
B	0
Q701	
E	3.7
C	3.6
B	3.1
Q751	
E	5
C	4.9
B	0.2
Q851	
E	8.8
C	1.7
B	8.6

MAIN PWB ASS'Y(1/2)
SFJ-1011A-M2: AV-20F475/S
SFJ-1012A-M2: AV-N21F45/S







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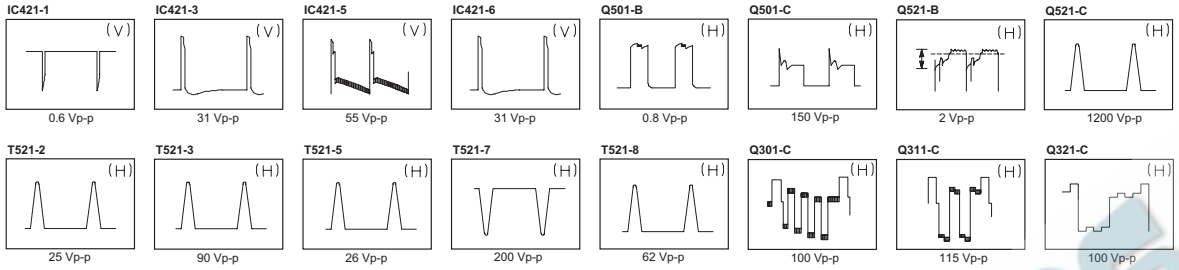
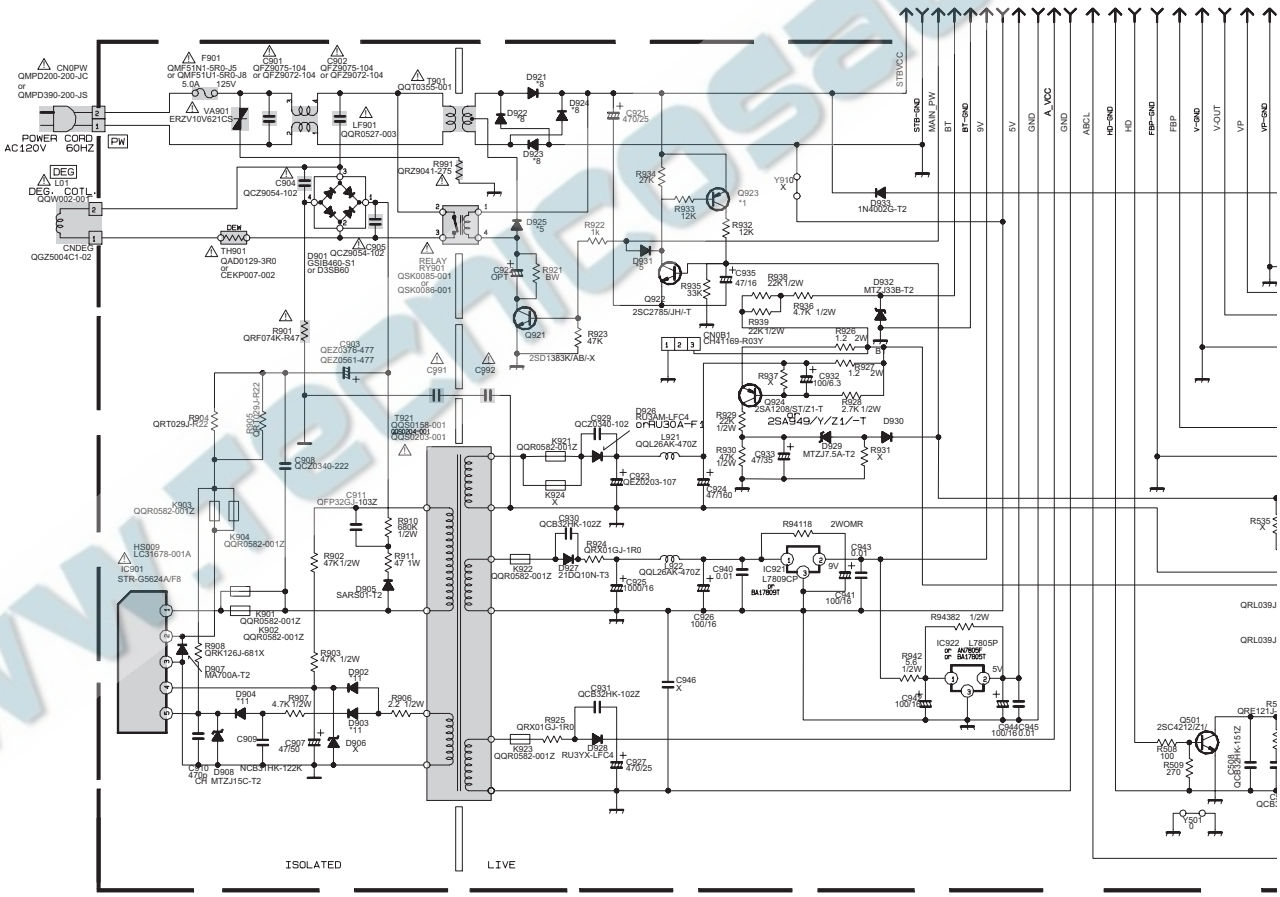
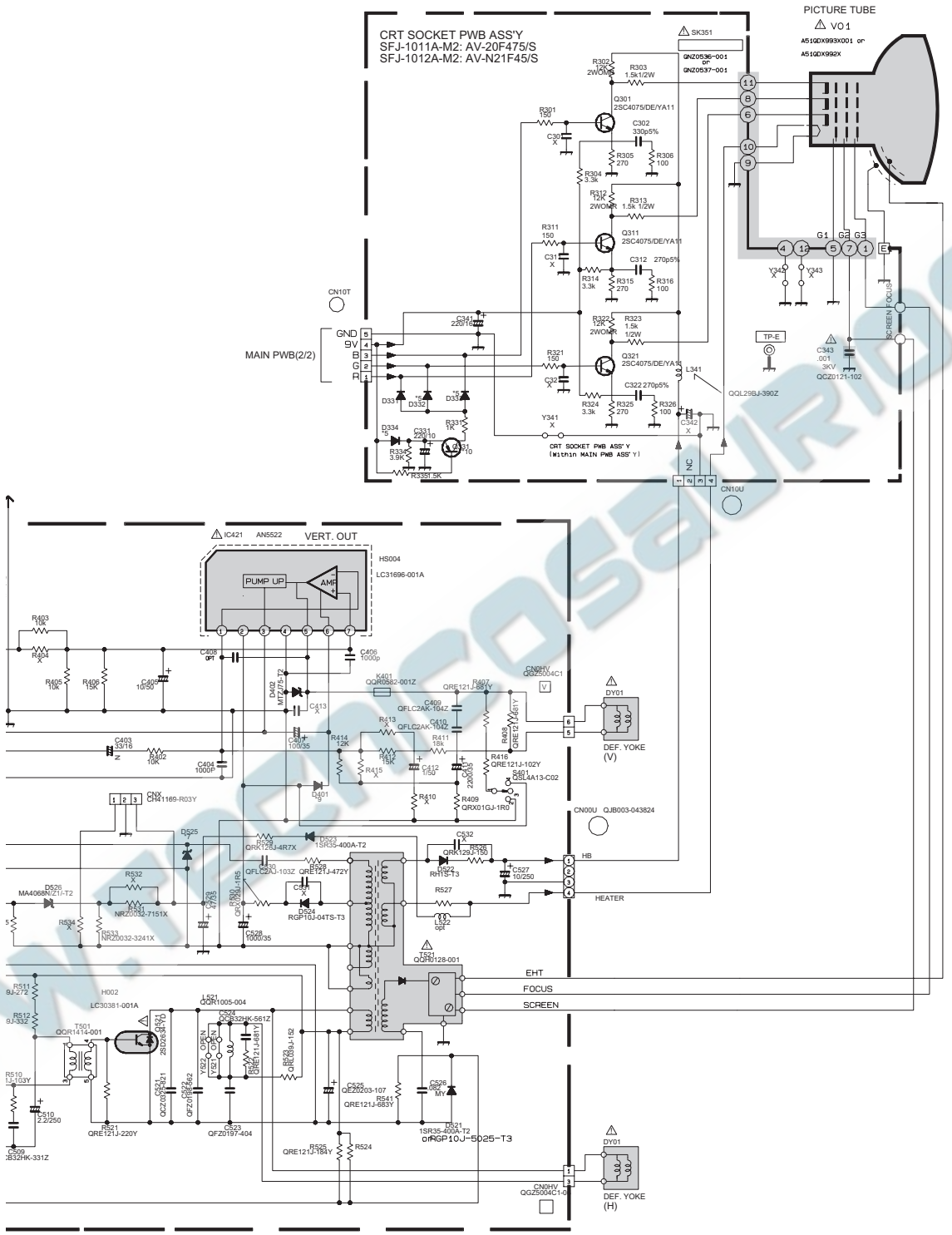


MAIN PWB ASS'Y(2/2)
SFJ-1011A-M2: AV-20F475/S
SFJ-1012A-M2: AV-N21F45/S

* DIFFERENCE LIST

SYMBOL	SFJ-1011A-M2	SFJ-1012A-M2
C991	QCZ9074-103	QCZ9073-332
C992	QCZ9074-103	IM-BW





MODE PIN NO.	DC (V)
IC421	
1	3.3
2	27.8
3	1
4	0
5	12.3
6	27.9
7	3.3
IC901	
1	133.8
2	0.1
3	0
4	32
5	1.6
IC921	
1	11.5
2	8.8
3	0
IC922	
1	7.4
2	5
3	0
Q921	
E	0
C	0.7
B	1.4
Q922	
E	0
C	9.1
B	0
Q923	
E	9.1
C	0
B	9
Q924	
E	134.2
C	0
B	133.9
Q501	
E	0
C	52.8
B	0.3
Q521	
E	0
C	134.2
B	0
Q301	
E	1.6
C	162.7
B	2.2
Q311	
E	1.7
C	160.6
B	2.3
Q321	
E	1.7
C	161.3
B	2.3
Q331	
E	8.1
C	-1.2
B	8.7

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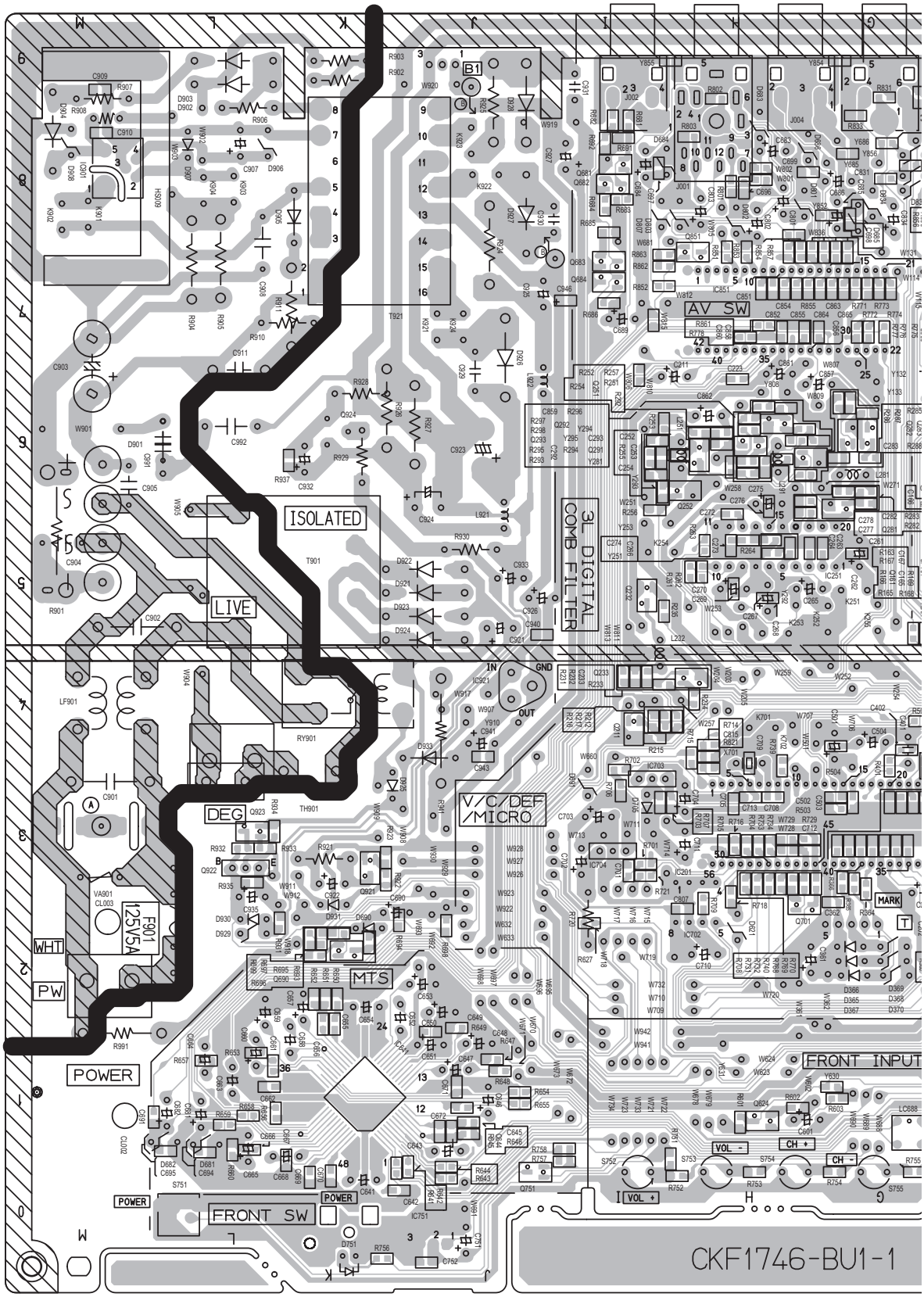
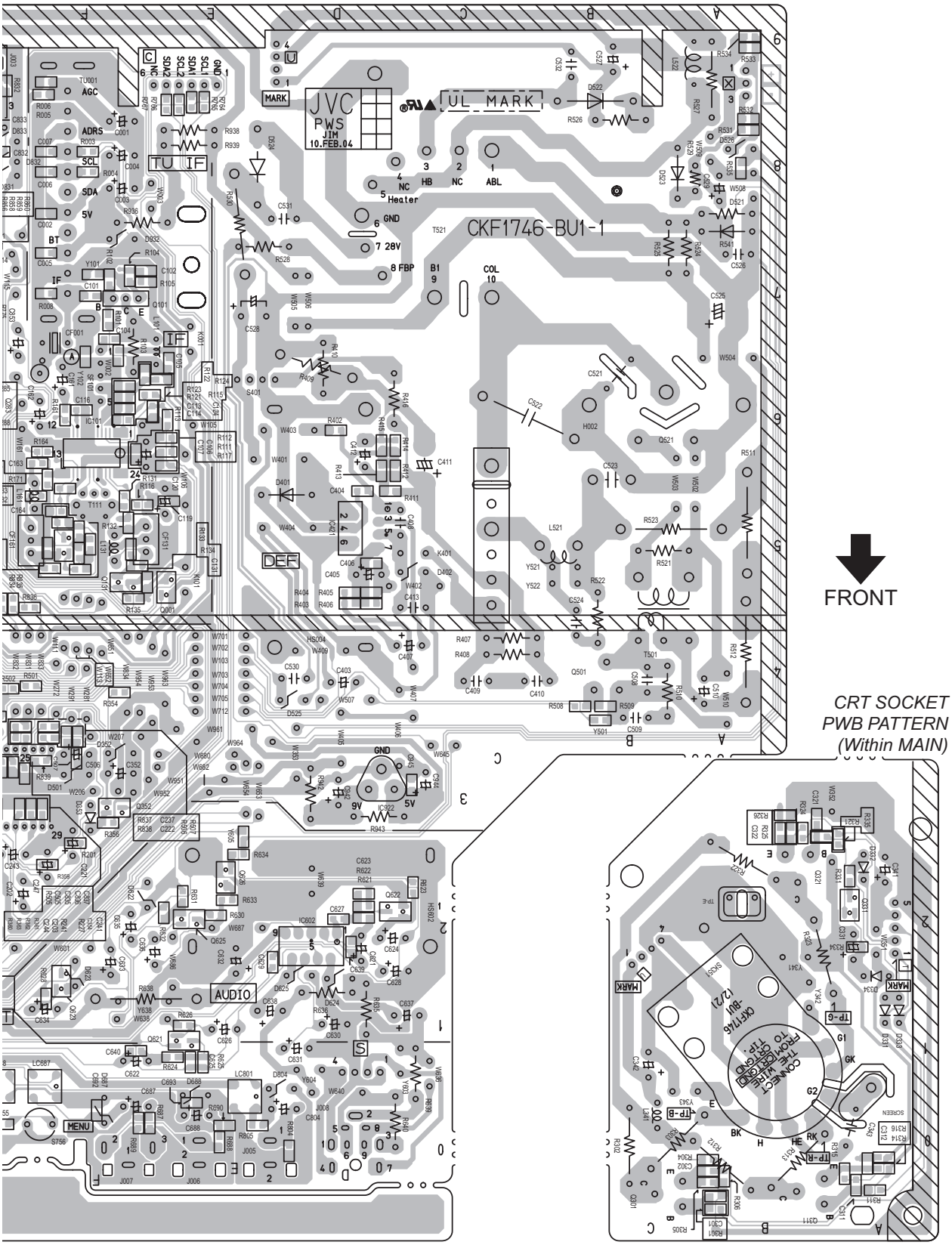
PATTERN DIAGRAMS *MAIN PWB PATTERN*




CKF1746-BU1-1
JVC
PWS
JIM
10.FEB.04
UL MARK
MARK
TU IF
IF
DEF
AUDIO
MENU
FRONT
CRT SOCKET
PWB PATTERN
(Within MAIN)
CONNECT THE GROUND WIRE FROM CKF1746-BU1 (2/2) TO GND.

CHANNEL CHART (US)

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
○	○	VL	02 03 04 05 06		I
		VH	07 08 09 10 11 12 13		II
×	○	MID	A	14	I
			B	15	
			C	16	II
			D	17	
			E	18	
			F	19	
			G	20	
			H	21	
			I	22	
		SUPER	J	23	
			K	24	
			L	25	
			M	26	
			N	27	
			O	28	
			P	29	
			Q	30	
			R	31	
			S	32	
			T	33	
			U	34	
			V	35	
			W	36	
		HYPER	W+1	37	
			W+2	38	
			W+3	39	
			W+4	40	
			W+5	41	
			W+6	42	
			W+7	43	
			W+8	44	
			W+9	45	
			W+10	46	
			W+11	47	
			W+12	48	IV
			W+13	49	
			W+14	50	
			W+15	51	
			W+16	52	
			W+17	53	
			W+18	54	
			W+19	55	
			W+20	56	
			W+21	57	
			W+22	58	
			W+23	59	
			W+24	60	
			W+25	61	
			W+26	62	
			W+27	63	
			W+28	64	
		ULTRA	W+29	65	
			W+30	66	
			W+31	67	
			W+32	68	
			W+33	69	
			W+34	70	

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
×	○	ULTRA	W+35	71	IV
			W+36	72	
			W+37	73	
			W+38	74	
			W+39	75	
			W+40	76	
			W+41	77	
			W+42	78	
			W+43	79	
			W+44	80	
			W+45	81	
			W+46	82	
			W+47	83	
			W+48	84	
			W+49	85	
			W+50	86	
			W+51	87	
			W+52	88	
			W+53	89	
			W+54	90	
			W+55	91	
			W+56	92	
			W+57	93	
			W+58	94	
			W+59	100	
			W+60	101	
			W+61	102	
			W+62	103	
			W+63	104	
			W+64	105	
			W+65	106	
			W+66	107	
			W+67	108	
			W+68	109	
			W+69	110	
			W+70	111	
			W+71	112	
			W+72	113	
			W+73	114	
			W+74	115	
			W+75	116	
			W+76	117	
			W+77	118	
			W+78	119	
			W+79	120	
			W+80	121	
			W+81	122	
			W+82	123	
			W+83	124	
			W+84	125	
		SUB MID	A-8	01	I
			A-4	96	
			A-3	97	
			A-2	98	
			A-1	99	
○	×	UHF	14 ≀ 69		IV

TOTAL 180CH
{ VHF 124CH
{ UHF 56CH

NOTE:
TO RECEIVE THE SUBSCRIPTION OR PREMIUM PROGRAMMING FROM CERTAIN CABLE COMPANIES.
SPECIAL ADAPTERS MAY BE REQUIRED.

CHANNEL CHART (CA)

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
○	○	VL	02 03 04 05 06		I
		VH	07 08 09 10 11 12 13		II
×	○	MID	A B C D E F G H I	14 15 16 17 18 19 20 21 22	
		SUPER	J K L M N O	23 24 25 26 27 28	
			P Q R S T U V W	29 30 31 32 33 34 35 36	III
		HYPER	W+1 W+2 W+3 W+4 W+5 W+6 W+7 W+8 W+9 W+10 W+11 W+12 W+13 W+14 W+15 W+16 W+17 W+18 W+19 W+20 W+21 W+22 W+23 W+24 W+25 W+26 W+27 W+28	37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64	
		ULTRA	W+29	65	
			W+30 W+31 W+32 W+33 W+34	66 67 68 69 70	IV

MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
×	○	ULTRA	W+35 W+36 W+37 W+38 W+39 W+40 W+41 W+42 W+43 W+44 W+45 W+46 W+47 W+48 W+49 W+50 W+51 W+52 W+53 W+54 W+55 W+56 W+57 W+58 W+59 W+60 W+61 W+62 W+63 W+64 W+65 W+66 W+67 W+68 W+69 W+70 W+71 W+72 W+73 W+74 W+75 W+76 W+77 W+78 W+79 W+80 W+81 W+82 W+83 W+84	71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125	IV
		SUB MID	A-8 A-4	01 96	I
			A-3 A-2 A-1	97 98 99	II
○	×	UHF	14 ≀ 69		IV

TOTAL 180CH
{ VHF 124CH
{ UHF 56CH

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JVC CANADA INC.

Head office : 21 Finchdene Square Scarborough, Ontario M1X 1A7 (416)293-1311

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